DOCUMENT RESUME

ED 323 347 CE 055 696

AUTHOR Tuijnman, Albert
TITLE Recurrent Education and Socioeconomic Success: A Theoretical and Longitudinal Analysis. Master's Degree Studies from the Institute of International Education No. 1.
INSTITUTION Stockholm Univ. (Sweden). Inst. of International Education.
REPORT NO ISBN-91-7146-467-0
PUB DATE 86
NOTE 155p.; Master's Thesis, University of Stockholm.
PUB TYPE Dissertations/Theses - Master Theses (042)

EDRS PRICE MF01/PC07 Plus Postage.
DESCRIPTORS Adult Education; Career Development; *Continuing Education; *Educational Attainment; Educational Benefits; *Education Work Relationship; Employment Level; Foreign Countries; Longitudinal Studies; *Occupational Mobility; Outcomes of Education; *Promotion (Occupational); *Salary Wage Differentials; Socioeconomic Status
IDENTIFIERS *Sweden

ABSTRACT

Data from the Malmo (Sweden) longitudinal study were examined for the effects of continuing adult educational attainment and formal schooling on subsequent socioeconomic achievement over the life span of the individual worker. The results suggest that acquired level of formal schooling directly influences occupational success and earnings in the early, middle, and late phases of the career cycle investigated. The effect of continuing education attainment on occupational success increases considerably from age 35 to 52. The results do not indicate that continuing education exerts a significant effect on earnings. Continuing education may function as a second road to occupational mobility partially independent of acquired level of formal schooling. The results generated, however, do not lend support to the assumption that recurrent adult education may significantly affect the relative earnings differentials between the various status groups in society. (Part 1 of this document establishes the theoretical analysis and conceptual frameworks of continuing education. Part 2 reviews Swedish developments from 1960-1985. Part 3 describes the aims, methodology, and findings of the 45-year Malmo study. Appendices contain 24 tables, and a list of over 300 references is included. (CML)

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MASTER'S DEGREE STUDIES FROM
THE INSTITUTE OF INTERNATIONAL EDUCATION

No 1

ED323347

RECURRENT EDUCATION AND SOCIOECONOMIC SUCCESS:

A THEORETICAL AND LONGITUDINAL ANALYSIS

ALBERT TUIJNMAN

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Master's Degree Studies from the
Institute of International Education
No 1.

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ISBN 91-7146-467-0
Printed in Sweden
by JINAB, Stockholm 1986

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Institute of International Education
University of Stockholm
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ABSTRACT

To date, little is known about the effects of recurrent adult educational attainment on subsequent socioeconomic achievement over the life-span relative to the possible effects of formal schooling. The present study attempts to address this phenomenon using longitudinal data. Part One of this study introduces the principles of recurrent education, reviews rationales for recurrent education, and presents a conceptual framework based on an analysis of the interaction dynamics between macro-level societal dimensions, meso-level educational institutions, and micro-level human perceptions and actions. Part Two deals with the emergence of recurrent education in Sweden from 1960-1985. It presents developmental trends in recurrent education reform work, reviews relevant policy statements, and outlines types, and patterns of recruitment to formal adult education. In Part Three, the following issues are critically examined: (1) what is the relationship between formal schooling and socioeconomic achievement, and how does it change across the life-span?, (2) what are the possible effects of recurrent adult education on socioeconomic achievement and how do these change over time when compared to the enduring effects of formal schooling?

The results arrived at seem to lend support to the assumption that acquired level of formal schooling directly influences occupational success and earnings in the early, mid, and late career phases of the socioeconomic career cycle investigated. The total effect of recurrent adult educational attainment on occupational success increases considerably from age 35 to 52. The results do not support the assumption that recurrent adult education exerts a significant effect on earnings. The direct effect of formal schooling on occupational success appears to augment from around age 30 to 42, but decreases from age 42 to 52. Recurrent adult education mediates, and partly reinforces, the effect of formal schooling on occupational achievement in mid and late career to the extent that the total of direct and indirect effects of schooling on occupational achievement from age 35 to 52 appears to be more stable than initially assumed. The resource conversion models explain only a minor proportion of the variance in recurrent adult education at age 35, 42 and 52. It would appear, therefore, that recurrent adult education may function as a second road to occupational mobility partly independent of acquired level of formal schooling. The results generated do not lend support to the assumption that recurrent adult education may significantly affect the relative earnings differentials between the various status groups in society.

Descriptors: Recurrent education, effects of education, status attainment, longitudinal research, social psychological modelling, economics of adult education, career development theory, occupational achievement, life-time earnings.

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ACKNOWLEDGEMENTS

The present study has been produced as a thesis for the Master Degree in International Education at the Institute of International Education, the University of Stockholm.

I wish to thank professor Ingemar Fägerlind for his permission and encouragement to utilize a data set derived from the Malmö Longitudinal Study, as well as for his guidance throughout the project. I am indebted to my supervisor, Dr. Vinayagum Chinapah, for his teaching of quantitative research methods and for his criticisms of earlier drafts of this manuscript. The study would not have been possible without longitudinal data. Hence, I want to thank Mrs. Ros Mary Hartman, Mrs. Zenja Hellström, Mrs. Görel Strömqvist, Dr. Margareta Furu and other members of the Malmö Study research team for their invaluable support.

For their encouragement, criticism and stimulating discussions I wish to thank the staff members, researchers, and colleagues at the Institute. In particular, I wish to express my gratitude to professor Torsten Husén and Dr. Richard Noonan for their constructive comments on theoretical and analytical chapters. I owe my acknowledgements to the authors whose works have been crucial to my understanding of the recurrent education thesis; Dr. Jarl Bengtsson (OECD), professor Henry M. Levin (Stanford University), professor Kjell Rubenson (Linköping University), and Dr. Hans Schütze (OECD). Lastly, financial support granted by the scholarships section, Swedish Institute, is gratefully acknowledged. I am personally responsible for remaining errors in the text.

Stockholm, November 1986

Albert C. Tuijnman

The data set utilized in this publication has been collected for the Malmö Study from 1938 to 1984 for 1,542 individuals. The collectors of the data bear no responsibility either for the analysis or for interpretations advanced.

Chapter 1.

AIMS AND ORGANIZATION

1.1 Aims of the Study

The aims of the present study are:

1. to conduct and present a literature review on the notion, principles, rationales, and alternative strategies peculiar to the recurrent education thesis. The study should also comprise a discussion of relevant theoretical orientations with a focus on motives for recurrent education. The review facilitates the construction of a conceptual framework capable of dynamically linking micro-spaces of human action with recurrent education institutions and macro-level cultural, economic, and political dimensions of nation states belonging to the OECD group;

2. to discuss developmental trends in recurrent education in Sweden from about 1960 to 1985. The overview focuses on reform work in Swedish education, stated goals for policy action, and patterns of recruitment in quantitative terms. The analysis is to help reviewing the criteria and procedures relevant for the indexing of recurrent adult education programs in Sweden.

3. to estimate the effects of formal schooling and recurrent adult educational attainment on subsequent occupational achievement and earnings in the early, mid- and late career phases of the human life-span.

1.2 Organization of the Study.

The report consists of three parts. Part One contains a review of definitions, theoretical interpretations, conceptual frameworks and various motives for recurrent education and training orientations. Part Two presents a general overview of developmental trends in Swedish recurrent adult education from about 1960 to 1985. Part Three consists of a brief introduction to the Malmö Longitudinal Study from which the data set has been derived. In addition, Part Three presents a literature review focusing on the relationships between acquired level of schooling, recurrent adult education participation, and subsequent status attainment processes. Part Three presents a particular kind of resource conversion model, various indicators covering corresponding variables, analytical procedures, and results of a path analysis performed on the resource conversion model at several points in time using the instrumental variables method and a repeated series of OLS regression as a standardized path solution.

PART ONE

RATIONALES OF RECURRENT EDUCATION AND TRAINING:

A THEORETICAL ANALYSIS

Chapter 2.

CONTEXT AND CONVENTIONS

2.1 Introduction

In the present chapter, the conventions and terms of reference used in this study are introduced. Before setting out on this task, reference is made to the wider contexts in which educational systems operate. Thus, the first sections are concerned with the extent to which it is possible to make general observations about the characteristics and peculiarities of systems of education in essentially a cross-national perspective. With a view to the nature and the significance of various arguments forwarded, it is suggested that the discussions, analyses, and results this study presents are meant to exclusively apply to the nation-states which belong to the Organization of Economic Cooperation and Development (OECD).

The second part of this chapter discusses the various terms of reference used in this study. Among other things, reference is made to the emergence of a relatively distinct subdisciplinary domain of inquiry constituted by the field of adult education. Apart from attempting to delineate the formal, non-formal and informal modes of education and training, an effort is made to briefly review the notions of lifelong, permanent, continuing, and recurrent education. It is suggested that, although these concepts have been interchangebly used by some authors in the literature, their relatively different connotations may invite divergent interpretations, conclusions and recommendations for policy action. It is suggested that the assessment of motives and rationales for recurrent education and training may depart from an analysis of specific longterm developmental trends and problems of transition as experienced by a majority of welfare societies belonging to the OECD group.

2.2 Transnational Context

The unprecedentedly rapid process whereby educational systems have expanded appears to have had world-wide dimensions. Even though the general lines of this educational explosion can be traced in nearly all contemporary societies, the expansion has not followed identical patterns everywhere (Banks, 1976). The past thirty years have been characterized by a fluctuation of trends regarding social, political, and economic commitment to educational development (OECD, 1977a). The longterm trends and developmental functions which assumedly underly the process of social change (Flora and Heidenheimer, 1981) have essentially transnational or global characteristics (Galtung, 1980a). Even

though general trends with regard to educational development during the Post War era are generated in an internationally comparative context (Heidenheimer, Heclo and Adams, 1983), the extent to which educational policy components and attributes of innovation and reform reflect resemblances or convergences across nations is largely a function of specific meanings and properties eminating from developmental processes within their historical context and specific national settings (Przeworski and Teune, 1967; Lijphart, 1971; Halls, 1973; Wirt 1980; Przeworski, 1983). Cross-polity comparisons give rise to concrete conceptual and methodological problems in the effort of developing analytic procedures for the investigation of political, social, economic, and educational questions across societies and cultures (Rapoport, 1955; Almond and Powell, 1966; Barber, 1973; Postlethwaite, 1986).

It is generally acknowledged that the contemporary world has become subdivided into dissimilar socioeconomic systems: one developed and another developing. Alternative classifications are suggested comprised of, for instance, nation-states ranked according to alledgedly traditional, transitional, and modern features. Frequently, alternative criteria for the ranking of nation-states of the world socio-economic system are derived from an analysis of their political allegiances or of dominant ideological climates. Other classifications may be based on a given society's gross domestic product or may be the result of a comparison of social mobility rates, of enrolment ratios at the primary, secondary or tertiary levels of education, public expenditures on education, or of priority choices in relating education to a national development target (World Bank, 1980; Boli et al., 1985; Psacharopoulos and Woodhall, 1985). Various dissimilarities which exist between the central and peripheral nation-states of the world economic order extend to the domain of education. The wide range of disparities persisting between developing nations and those belonging to the OECD as regards enrolments, expenditures, and their implication for policies, constitute a well-documented area of concern (Simmons, 1980b; Foster, 1980; Heyneman, 1984; Ahmed, 1985).

Although rationales and general characteristics of reform and innovation in education indeed have had global dimensions in many respects, the extent to which given trends of educational development can be generalized in terms of their common causal relationships is problematic. In the developed and developing societies alike, various informal and non-formal out-of-school education and training programs have been set up in response to the identification of specific "new" needs and concepts of development. General statements concerning principles for the longterm planning of education, such as those embodied in the rhetoric about "recurrent" or "lifelong" education, have to be viewed within the contexts of specific nation-states and their priority choices for national development. The fulcrum of this observation is that the transfer of criteria for educational planning between nations must be treated with extreme caution. The principles of recurrent or lifelong education may, in the face of disparities existing at cross-national, national, and regional levels, accomodate the design of different strategies for intervention.

During the past decades the concepts of permanent, continuing, and lifelong education have been discussed as presenting major guiding principles for the planning of educational innovation. Unesco in particular advocates lifelong education as a "master principle" for future educational development. The so-called Faure Commission, which presented recommendations to Unesco in 1972, reflects favorably on the concept of lifelong education:

> "In present circumstances, taking the increased possibilities for future action into account as well as experience already gained, partial educational reforms will not in general be adequate, even if they are major ones. We must innovate and envisage fundamental alternatives to the very concepts and structures of education...
>
> Principle: Every individual must be in a position to keep learning throughout his life. The idea of lifelong education is the keystone of the learning society.
>
> Consideration: The lifelong concept covers all aspects of education and embracing everything in it... Lifelong education is not an educational system but the principle on which the overall organization of a system is founded, and which should accordingly underlie the development of each of its parts.
>
> Recommendation: We propose lifelong education as the master concept for educational policies in the years to come for both the developed and the developing countries".
>
> Faure et al. (1972: 181-82) Paris: Unesco.

However, regardless of whether lifelong education is seen as an abstract model for future development or as a coherent set of concrete propositions for current educational planning, the ensuing abstract/utopian or concrete/realistic strategies are likely to depend to a very large extent on both internally and externally determined political and socioeconomic realities of a given nation-state. For instance, because most developing societies are unable to raise the resources required in order to furnish their populations with formal instruction, politicians court the concept of basic education as "a first stage" in a process of lifelong education (Sachsenmeier, 1978). In a similar vein, principles of recurrent education perhaps hardly apply in an educational setting in which inadequate delivery mechanisms create conditions where, for large segments of the population, any basis "to recur to" virtually does not exist.

In order to avoid normative discussions as to the relevance or practical applicability of lifelong or recurrent education for developing societies it must be made explicitly clear that the subsequently ensuing analysis about rationales, target groups, and alternative strategies for recurrent education is meant to solely apply to societies which constitute the OECD. Although the existence of apparently common characteristics and perhaps of the further convergence on a global scale of mass education is acknowledged; and thus, although principles for innovation and development in the educational sphere, such as those advocated by the lifelong or recurrent education theses, may pose a frame of reference for the peripheral and affluent societies alike, this study and its implications for educational policy should not be regarded as reflecting the needs and priorities for policy action relevant to most developing societies.

Notwithstanding the many correspondencies between educational systems in a global perspective, certain specific complexities of the so-called welfare societies have given rise to distinct problems and to the formulation of alternative strategies for policy action. Once an affluent society reaches the saturation point of basic needs, and under the impact on the educational system of the norms and behavior patterns of consumer-oriented philosophy, education becomes more of a commodity for private consumption and secondary human capital formation rather than one of econometric investment (von Recum, 1981). A micro-level demand for more education in a lifelong perspective may indeed run counter to short-cycle macro-level needs. These and other conflict-laden contradictions of the welfare state, such as a tension between meritocratic and egalitarian policy concerns, have shaped the recurrent education and training proposition. Thus recurrent education may become a trade-off between social pressure for more education, manpower needs in terms of labor recycling, and economic constraints. Probably, the rationales for recurrent education and training can be better analyzed in the context of attributes of the "welfare state in crisis".

When analyzing the "welfare state" in an attempt to understand why and how contemporary affluent post-industrial nations have developed into a welfare state of some sort, sociologists and political scientists have framed the concepts of institutional vis-a-vis residual or marginal welfare states (Esping-Andersen and Korpi, 1986). The residual models, which are characterized by the minimal scope of state welfare provision and also by an underdevelopment of the social services at large, apply to the strategies and policies of recurrent education and training as well. Esping-Andersen and Korpi (1986) write that the residual or the marginal models are based on the premise that the vast majority of the population can extract its own welfare. In a similar vein, and in terms of recurrent education and training delivery, this would imply that the individual person rather than the state is expected to be responsible for the financing and organization of recurrent education. In the institutional model, by contrast, a state may be expected to assume overall responsibility for the design and implementation of a system of recurrent education and training. Accordingly, the design of a recurrent education system and of its corresponding modes and mechanisms for financing will probably reflect the extent to which a state is prepared to employ its power resources to intervene in political, economic and socio-cultural dimensions of a given nation with the specific objective of promoting and steering social change by means of education.

2.3 Terms of Reference

It needs, perhaps, small wonder that the premises constituted by alternative approaches to traditional systems of education, such as for instance the various formal or non-formal modes of adult educational delivery, have increasingly been the subject of research during the past couple of decades.

As a result of the desire to better utilize the full potential of a multitude of non-formal education and training programs as additional instruments in the process of attaining multiple public policy goals, policy-makers have spurred the initiation of an extensive series of research in the less "conventional" sectors of education. The Unesco-initiated program of research on the future of adult education conducted as a prelude to the 1985 Conference on Adult Education in Paris, stand out as good examples (Unesco 1985a and 1985b).

As probably happens to about every field of scientific inquiry during the course of its development, the subdiscipline known as adult education evolved over time from a rather obscure and marginal activity embedded within the mainsteam of educational research into a relatively "distinct" subdisciplinary domain, characterized by its "own" and differentiated terminology and research traditions (e.g. Lengrand, 1975; Suchodolski, 1976; Gelpi, 1985). Although conceptual disagreement and disunity of opinion are not altogether banned, and a variety of ambiguous interpretations persist, their separate connotations have to a certain extent been clarified (Lowe, 1982). Levin and Schütze (1983: 11) contend however that, although the terms recurrent and lifelong education have frequently been used to refer to a principle for the planning of education across the life-span, an apparent "generalization in terminology tends to gloss over the great diversity in underlying approaches and in social and educational concerns". Given the relativity of the "conceptual agreement" generated thus far, it may possibly be a worthwhile undertaking to reproduce some relevant definitions.

One key-issue is to conceptually distinguish between learning and education. Whereas learning is interpreted as an essential characteristic of living organisms, education is regarded as a specific kind of organized and structured learning. "Learning occurs from craddle to grave but, and more significant to this analysis, in a broad array of formal, non-formal, and informal settings" Boshier (1986: 22). Learning is an internal process and should not be confused with education which refers to the systematic creation of conditions which facilitate learning. Learning is conceptualized as a natural process referring to "change in a subject's behavior or his behavior potential to a given situation brought about by repeated experiences in that situation" (Bower and Hilgard, 1981: 11). Learning concerns an essentially unintentional and nondirected process which occurs continuously and in all environmental settings; education, by contrast, is often viewed as a to certain degrees of formality organized endeavour. A definition of education is presented by Dewey (1966) "it is that reconstruction or reorganization of experience which adds to its meaning and which increases the ability to direct the course of any subsequent experiences".

Another major issue concerns the properties of the three-fold taxonomy of education as suggested by Coombs and Ahmed (1974). This taxonomy consists of the formal, non-formal, and informal modes of education. Although these notions are frequently used in a number of contexts, a general feeling of uneasiness still surrounds them. The definition of the three modes of education is reproduced below (Coombs and Ahmed, 1974: 8).

> "Informal education as used here is the lifelong process by which every person acquires and accumulates knowledge, skills, attitudes and insights from daily experiences and exposure to the environment - at home, at work, at play; from the example and attitudes of family and friends; from travel, reading newspapers and books; or by listening to the radio or viewing films or television. Generally, informal education is unorganized and often unsystematic; yet it accounts for the great bulk of any person's total lifetime learning - including that of even a highly "schooled" person".
>
> "Formal education as used here is, of course, the highly institutionalized, chronologically graded and hierarchically structured "education system", spanning lower primary school and the upper reaches of the university".
>
> "Nonformal education as used here is any organized, systematic, educational activity carried on outside the framework of the formal system to provide selected types of learning to particular subgroups in the population, adults as well as children".

Lowe (1982: 22) ventures this definition of adult education:

> "Adult education refers to a program deliberately designed to satisfy any learning need or interest that may be experienced at any stage in his or her life by a person who is over the statutory school-leaving age and whose principal activity is no longer in education. Its ambit thus spans non-vocational and vocational, general, formal and non-formal studies, as well as education or training pursued with some collective social purpose".

The idea that education ought to be available over the entire life-span implies that the formulation of organized procedures for the facilitation of lifelong learning must be considered. "Education for all" is the title of a third program contained in Unesco's second medium-term plan which is to guide Unesco's activities for the period 1984-1989. One important sub-program of "Education for all" concerns the further expansion of adult education (Unesco, 1983). The promotion of adult education is seen as an essential prerequisite for lifelong education and as an important factor in the process of achieving educational democracy. Emphasis on learning beyond the traditional school-leaving age points to various major roles for adult education. However, as the definition of lifelong education will suggest, the implementation of this principle goes considerably beyond merely extending conventional schemes of adult education to a wider audience on a basis of some kind of deficiency or needs analysis (Boshier, 1986). A common motive underpinning principles of lifelong, continuing or recurrent education stems from the idea that, in our rapidly changing societies, learning is necessary throughout life, not for a selected few, but for all (Faure et al., 1972). The differences between the concepts of lifelong, continuing, permanent and recurrent education mainly refer to the extent to which youth and adult learning are conceptualized as belonging to the responsibilities of the state. They concern the extent to which adult learning ought to be an institutional endeavour or to remain a marginal activity. This would appear to be a question of responsibility, of liberalism versus collectivism, but also of positivistic, normative and humanitarian perspectives on the nature of man (Rivera, 1983).

In the US, "continuing education" denotes the entire range of elementary, secondary, and post-secondary educational opportunities offered by public and private agencies, whereby mainly

adults engage in academic, vocational, leisure time and personal development (Unesco, 1979: 41). The concept of "permanent" education as advocated by the Council of Europe has a similar meaning. Lifelong education refers to a set of organizational, financial, administrative and didactic procedures for the fostering of deliberate lifelong learning. Lifelong education is thus concerned with the purposeful and systematic facilitation of deliberate and goal-oriented learning across the life-span (Cropley, 1985: 3079). Dave (1976: 43) writes:

> "Lifelong education is a comprehensive concept which includes formal, non-formal and informal learning extended throughout the whole life-span of an individual to attain the fullest possible development in personal, social or professional life. It seeks to view education in its totality and comprises learning that occurs in the home, school, community, and workplace, and through mass media and other situations and structures for acquiring and enhancing enlightenment".

Principles of lifelong education have received both widespread acclaim and criticism. It has been said that, for the good or the bad, lifelong education implies utopianism (Furter, 1977). With regard to the "voluntarity debate", Ohliger (1974) writes

> "Schools, other educational institutions, and now also adult education institutions define people as lacking, as inadequate, insufficient and incomplete. The danger is real that somewhere in the near future people will be condemned to compulsory and lifelong education...".

The essence of recurrent education has often been referred to as "the distribution of education over the human life-span in a recurring manner: that is, in alternation with other activities such as work, leisure or retirement" (OECD, 1973: 24). The delay of components of education until a particular mature age would make the educational system more responsive to change in the labor market and would give the individual a more flexible opportunity for personality development (OECD, 1971). The idea of recurrent education was "officially introduced" by Mr. Olof Palme, the then Swedish Minister of Education, in his address to the Sixth Conference of European Ministers of Education at Versailles in May 1969 (Kallen, 1979: 47). Palme introduced the principles of recurrent education and training in these words:

> "The only remaining material possibility is, therefore, to reduce the growth of post-secondary education in order to enable adult education to expand. This thought may appear absurd to anny. The solution I have in mind, however, is not to take from the one and give it to the other. Let us instead regard the entire education coming after school education as a unit, organizationally, and from the point of view of resources. Of course I do not intend to deal with all questions and problems connected with such a radical structural change. I believe, however, that here is the central issue of educational policy in the times to come. And since this issue is indeed very closely connected with the development of secondary education I find it appropriate to touch upon some of its more interesting aspects. I think that the best way for me to illustrate the question at issue is to assume - as a hypothesis, representing an extreme, this I am fully aware of, that all post-secondary education is organized on a recurring basis, that all people, after completing upper secondary education, go out into a job, that after some time at work they take another period of education, then return to a job again, pass through an other period of education and so on".
>
> Excerpt from a speech by Mr Olof Palme in 1969. Source: OECD 1971: 25.

Recurrent education has sometimes been equated with the formal mode of education (OECD, 1971: 33). Others took it to comprise also informal or non-formal patterns of education and training (Stoikov 1975: 5). Still later recurrent education is seen as posing an organizational principle or a strategy for long-term planning rather than as a concrete policy with specific goals (Kallen, 1979: 48). Recurrent education represents a move to a comprehensive and flexible post-compulsory educational system that incorporates the present formal educational branches and non-formal adult education and training (Emmerij, 1983: 300). Important rationales for recurrent education, as presented in the early 1970s, relate to the modification of the educational system. Recurrent education, then, forms a constituent part of any strategy aiming at the unification of what at present are three unrelated sectors: a traditional post-compulsory system; on-the-job training of all kinds and at all levels; and adult education (OECD, 1973: 25). The OECD (1982a: 13) contends:

> "Recurrent education is an original policy for education which combines a labor market policy, an employment policy, a social policy, and a concept of teaching. It argues not for new educational goals and objectives but for an alternative for educational opportunity, whereby present systems are gradually transformed so that they do not any longer provide education in one stretch during an individual's youth, but over the entire life-span and in alternation with other activities and, particularly, with productive work".

The OECD (1973: 28) and Bengtsson (1985: 4225) write that the basic principles of recurrent education and training refer to:

(a) The last years of compulsory education should provide a curriculum that gives each pupil a real choice between further study and work.

(b) After leaving compulsory school, access to post-compulsory education should be guaranteed to the individual at appropriate times over his or her total life cycle.

(c) Distribution of facilities should be such as to make education available to all individuals so far as possible wherever and whenever they need it.

(d) Work and other social experience should be regarded as a basic element in admission requirements and design.

(e) It should be possible to pursue any career in an intermittent way, alternating between work and study.

(f) Curricular design and content and teching methodology should be designed in cooperation with the different groups involved (students, teachers, administrators) and adapted to the interests and motivations of different age and social groups.

(g) Degrees and certificates should not be looked upon as an "end result" of an educational career but rather as steps in a process of lifelong education, a lifelong career, and personality development.

(h) On completion of compulsory school, each individual should be given a right to periods of educational leave of absence with necessary provisions for maintaining job and social security.

Finally, it should be noted that there are differences between the ideas of alternation and recurrent education (OECD, 1982b: 63). Alternation concerns the more or less authoritarian planning of the curriculum by introducing in advance a sequence of alternation between instruction and training. Alternation is a strategy for improving the effectiveness of teaching processes and the preparation of students in order to meet the multiple demands of working life.

Whereas recurrent education is an open strategy which depends on the interactions of education with the organization of work and that of the social community throughout the life passage; alternation is a deliberately limited strategy. The former is a comprehensive approach in which the individual is given the power to organize training, to choose the level of aspiration, and to freely self-determine the period in which education or training is to take place. According to the OECD (1982b: 61), alternation refers to a "systematic inclusion in some training course of periods of work in an enterprise; these periods of practical experience being closely coordinated with teaching".

Though much has been written about the notions of recurrent or lifelong education, confusion perhaps persists. The fact that organizations stick to their "own" terminology indicates that there should be relevant distinctions between recurrent (OECD) and lifelong education (Unesco). Recurrent education concerns a more or less formal alternation between education and work, lifelong education relates more to informal learning settings.

Inherent to the recurrent education thesis is an acceptance of the desirability of readjusting the contemporary work ethos. A period of work is to be supplemented by the occational return to education or training of those who, in the first instance, belong to the labor force. Strategies for recurrent education are implicative of strong labor market biases while retaining a capacity for the promotion of public policies with a strong egalitarian or redistributive component. Lifelong education on the other hand would appear to convey the notion that work and education should not intermittently be supplementary facets of each other but should be intermingled at all times across the adult life-span. In practical terms, this means that, instead of alternation between education and work in some "reasonable manner", education complements work at any point along working life. Subject to its economic feasibility, this would imply an overhaul of current workplace conditions or practices, as well as the implementation of appropriate financing mechanisms and a restructuring of the time allocated to work and study.

In the context of transitional problems presently encountered by the vast majority of advanced welfare societies, rationales for recurrent education probably have more immediate practical utility and a more rationalistic appeal to planners and policy makers than those pertaining to its more normative counterpart lifelong education. Efforts to define the basic contours of a recurrent approach to innovation in education embracing modes and levels in their quantitative and qualitative aspects, and attempts to fine-tune the educational system to other economic or social policy domains, have received priority attention in many OECD societies. Concern with eventual negative long-term impacts of diversification on equality and planning prompted a renewed interest in strategies which may positively affect the better integration or coordination of diversified systems. It has been claimed that a linear expansion of educational supply into the future may not any longer constitute an adequate line open for policy action in pursuing the objectives thrust upon policy makers by the idea of institutionalizing comprehensive systems of recurrent education and training.

Chapter 3.

THEORETICAL ASPECTS OF RECURRENT EDUCATION

3.1 Introduction

The present chapter discusses some theoretical interpretations of plausible relationships between recurrent education and the phenomena of social change. The first section reviews various dominant though competing theoretical orientations. Paradigms and disciplinary allegiances are considered in terms of their relative successes or failures to explain the multiple aspects of the recurrent education and social change dynamic operating in contemporary Western societies. Subsequently, the recurrent education and training thesis will be discussed in the context of modernization, human capital theory, and radical critiques.

The section on modernization attempts to access the potentials of recurrent education principles for promoting modern values, institutions and production structures. Recurrent education is regarded as constituting an intermediate developmental "phase" rather than as an ultimate outcome of modernization processes. Human capital theory poses a framework against which the mainly economic feasibility of motives for recurrent education is examined. Radical-critical perspectives on recurrent education are summarily discussed in the fourth section. The critics of recurrent education point to its potential for legitimizing or reinforcing labor market segmentation, configurations of power and authority in society, and maintaining a social status quo. It is concluded that each of these theories, in spite of their limitations, is considered valuable in terms of its potential for clarifying issues surrounding the recurrent education and training proposition.

3.2 Paradigms of Education and Social Change

Contextual research on the mechanisms by which the interaction between educational processes and various societal dimensions may or may not lead to national change has attracted scholars from all disciplinary domains of the social sciences. Various schools of thought have proposed alternative explanations for observed phenomena. These have persisted without the synthesis needed for establishing common frames of reference. Efforts to subsume specific facts under a generalization have invariably stumbled over the issue of reality. For instance, McClelland (1974: 24) writes that "reality can be homogeneously expressed only by abstraction and by ignoring as irrelevant some characteristics of specific events". In addition, Karabel and Halsey (1977: 1) contend that any systematic attempt at categorizing

paradigmatic orientations within education theory necessarily results in the oversimplification of a complex social reality. Hence, the subsequent presentation of paradigms necessarily is limited in scope. When comparing alternative paradigms used by sociologists, Webb (1983: 112) contends that the first step is merely to recognize that there exists something approximating a complete set of theories from which authors have chosen subsets according to their disciplinary allegiances or personal predilections. Various classifications of the major paradigms within education theory exist. Basic ones probably emerge when contrasting ontological with cosmological branches of metaphysics. Doctrines such as pluralism, naturalism, materialism and dualism or dialectics and corresponding social theories differ in their explanation of the nature of change. Social theories thus differ in accounting for processes of educational change and development. Nevertheless "theories such as human capital, modernization, political integration or ideological diffusion, are similar in that they offer a general explanation which pin points a particular variable or process as universally responsible for educational development" (Archer, 1982: 3).

Various authors have attempted to advance principles meant to facilitate the conceptualization casu quo grouping of theories into typologies of some sort. Among these basic principles are concerns related to the subject-matter treated, to the methods and tools applied, and to the goals and objectives of discern. Well-known criteria for indexing schools of thought with their competing languages are divisions made between determinism and interactionism (Boudon, 1983), between principles of consensus and conflict (Paulston, 1976), or between competing ideologies (Kazamias and Schwartz, 1977). While being restrained by their predominant disciplinary allegiance, authors have attempted to frame the major theories of education from the perspectives of economics, political sciences, or sociology. Also, a number of typologies have been advanced on basis of specific properties and attributes of educational theory "proper". Generally, this latter kind of index has been organized around an accomodation of theoretical approaches to the issues of educational reforms and pedagogical processes (Paulston, 1977; Husén, 1979; Fägerlind and Saha, 1983; Carnoy and Levin, 1985).

The subdisciplinary and paradigmatic approach to the classification of education theory emphasizes the idea that, although the sociology of education may use a terminology that differs from the politics or the economics of education, their competing conceptual frameworks in terms of underlying paradigmatic orientations largely follow a similar course. The distinctions usually made between conflict and consensus paradigm families, or between determinism and interactionism are, though probably useful and relevant in some sense, inadequately well-defined from an intra-paradigmatic and subdisciplinary perspective. An index of this type attempts to frame dominant social theories on the basis of the assumption that they will, in one form or another, cut across major social science disciplines. In other words, and with regard to the domain of education theory, the principles of recurrent education may be assessed on the basis of a framework consisting of theoretical orientations derived from sociology, political sciences, and economics.

Table 3.1 presents a typology of education theory comprising three disciplinary allegiances and four dominant paradigmatic orientations. Though not in any absolute sense, the paradigms may be regarded as corresponding horizontally with each other.

Table 3.1 A Paradigmatic Typology of Education

Paradigmatic Orientations	Sociology of Education	Economics of Education	Political Economy of Education
	Functionalist	Human Capital	Classical-Liberal / Pluralist
	Structural-Functionalist		Bounded-Pluralist / Corporatist
	Conflict	Institutionalist	Neo-Marxian
	Interactionist	Dualist	Elitist

Source: Partly adapted from Webb (1983: 112-13).

The Table suggests that, although the specific terminologies fashionable within sociology, economics, and political science indeed to some extent differ, their corresponding conceptual frameworks would appear to have enough common characteristics to justify their horizontal unification into four paradigmatic orientations.

With regard to paradigms of education theory presented so far, one observation clearly stands out. Regardless of disciplinary or methodological orientation, authors tend to select specific issues and phenomena which constitute the foundation for their approach. In a way, the choice of these key-aspects limits the scope and the angle of their analysis. Because, as the above discussion has established, the literature on education theory already contains a good deal of excellent discussions on the various paradigmatic streams, theories, and models, a general review of theories with an essentially similar direction will not be made here. Instead, this section will concentrate on a discussion of the contribution various theories of educational reform and national development might make towards the better understanding of the state of contemporary educational systems in high tech societies with regard to the recurrent education and training proposition. That is, an attempt will be made to relate the crisis phenomena of the welfare state in transition to the emergent confidence in recurrent education and training using a multidisciplinary and an intra-paradigmatic approach.

Modernization theory provides a means for discussing recurrent education from a functionalist or pluralist sociological point of view. The neo-classical theory of human capital constitutes the framework for an economic analysis of recurrent education. Conflict, institutionalist or neo-Marxian oriented interpretations of the political economy of education and the workplace provide the context for an essentially ideologically committed and radical-critical review of the recurrent education thesis.

3.3 Modernization Theory and Recurrent Education

As a subject for research, the "modernization stream" has been approached by adherents to various social science disciplines. Since sociology is distinguished as a discipline by its focus on social structures; that is, by its stress on the persisting patterns of behavior and interactions between social positions (House, 1981: 525), sociologists usually approach the notion of modernization in terms of a process of social differentiation that characterizes a society as it moves to the application of new technologies, thereby transforming structures and creating new functional relationships. In his influential book on "the division of labor in society", Durkheim maintains that further differentiation of the social division of labor, brought about by advancing modernization, necessitates the creation of "new" institutions which mediate between individuals and the social collectives (Durkheim, 1969). Drawing in a pluralist Weberian tradition on Durkheim implied for 20th century sociologists an emphasis on pressure groups bargaining for universal suffrage in a neutral state. The process of modernization would create structural preconditions for the institutionalization of mass education. Functional differentiation in modern society would imply a gradual, functional extension of universal education. Central to this faith in the continuity of advancement, and in subsequent further differentiation of social organizations, is a conviction that new institutions must mediate between forces in opposition and harmonize their overt conflicts in society. Thus, a major function of patterns of societal organization is to contribute to the efficient working of the whole. That is, complex structures of organization are seen as spontaneously and simultaneously evolving with the attainment of a new level of cultural differentiation and a new phase of socio-economic development. Modernization supersedes more specific notions of industrialization or democratization (Flora et al., 1981: 38).

The concept of modernization implies that a key-determinant of social structure is neither constituted by ideology, nor class conflicts, nor culture, but by technology (Mishra, 1977: 34). Knowledge production and technological innovation affect the differentiation of complex social organizations, in particular of education and work. The generation of capital in the pursue of economic growth leads to reinvestment, not only in primary sectors of the economy, but in modern institutions assumed to influence the formation of "modern values". The existence of a linear modernization sequence has, however, been challenged by those who claim that human dispositions occasioned by participation in modern society constitute a precondition rather than an outcome of modernization at higher levels of organization. Education plays a crucial role in any continuous modernization dynamic. Education, as an integrative structure, functions to maintain stability and develops from simple or primitive forms to more complex or modern forms in response to change in other organizational structures (Paulston, 1976: 7). However, apart from merely responding to changing needs or emergent problems of transition, education also functions as an active agent of change. Recurrent education represents a functional and intermediate outcome, and a motor behind, some particular process.

The workplace and the educational system play crucial roles in creating social psychological modernity attributes of the type described by Inkeles and Smith (1974: 19-24) and Myrdal (1968: 61-62). From a perspective of smooth sequential social change, educational policies must bear witness to the particular phase of economic development being experienced. In relating modernization to recurrent educational policy, connections between structural and technological change and the wider dimensions of society at large need to be explored. It would be fruitful to approach the education-modernization dynamic by tracing the origins of these reciprocal relationships, and to attempt to identify some of the longterm developmental trends, as well as some specific new needs and problems, which may facilitate the eventual design of a recurrent educational system.

The concept of recurrent education has been formulated in the context of modern welfare societies. Since the creation of the welfare state is often seen in terms of a response to specific and longterm developmental functions, the emergence of notions of recurrent education may be regarded as presenting an answer to developmental problems largely associated with the state of educational and social structures and their interrelationships with such phenomena as longterm gradual economic, demographic, and political change in a historical perspective. In this way, recurrent education and indeed the welfare state "seem to be a far more general phenomenon of modernization, one which is not exclusively tied to its democratic-capitalist version" (Flora et al. 1981: 23). In explaining the origins of mass education, Boli et al. (1986: 106) regard the historical democratization of education as "an outcome of religious, economic and political processes that expand and secularize the organization and ideological rules of individuals in the rational state". Seen in this light, mass education is clearly linked to the complex of other modern institutions that structure society. Emerging systems of mass education pass through several stages (Beeby, 1966 and 1980). Some claim that these "stages" of educational innovation run parallel to certain phases of economic growth, stages of political development, and to phases of nation-state building. Thus, whereas the emergence of mass education may be a result and an antecedent of economic development, increasing political mobilization, or concomitant differentiation on the labor market, it would appear to be crucial to see educational development also as the outcome of an internal growth dynamic (Coombs, 1985). From a sequential modernity point of view, the external and internal dialectical counterparts of the developmental process which produced both the welfare state and mass education press for and indeed may eventually necessitate the democratic expansion of educational systems in the direction of comprehensive recurrent education.

Apart from several macro-level functions which may eventually accomodate the concrete implementation of recurrent education provision over the human life-span for all citizens regardless of social background or current position, a contemporary general transition towards a post-welfare, service or information society, may constitute problems which demand an immediate and specific educational response. The pace and the direction such responses may take is determined by many constraining factors.

Table 3.2 attempts to synthesize multiple aspects of stages of political, economic and educational development into a common framework denoting phases of formation, growth, consolidation, transition, and postmodern reformation. Recurrent education is conceptualized as presenting an answer to longterm developmental functions and to shortterm problems of transition. Because the problems are transitional instead of structural, recurrent education is seen as constituting only one stage in a process which may lead to the design of integrated approaches to lifelong education and the creation of the learning society. Table 3.2 summarizes some aspects of the discussion ensuing below.

According to Fagerlind and Saha (1983: 141) the "modernization strategy" for educational reforms is based upon the expansion of the "modern sectors" of the educational system, including a high participation rate and standard curricula. Rationales for recurrent education may correspond to the emergent needs of a future post-modern society in high-tech terms. The sequential nature of educational innovation, perhaps, will facilitate the institutionalization of recurrent education at a point in the future. Problems created by the rapidity of current transition processes seem to demand immediate policy responses within the domain of education and training. Some of the "new" conditions which educational policy presently faces are (1) the existence of mass unemployment and underemployment while the creation of new job opportunities has significantly increased in absolute terms; (2) the expansion of part-time exployment structures; (3) declining proportions of self-employed; (4) an unprecedentelly large influx of new entrants on the labor market; (5) a greatly increased number of women, immigrants and migrants on th labor market; (6) an expansion or consolidation of the dual economy; (7) the decline in annual and life-span working time; (8) increased longivity; and (9) implications of technological development for the organization of leisure and work.

The "new languages of modernity" (OECD, 1985: 36) imply a need for the revision of training and retraining schemes. Recurrent education appears indispensable for the promotion of equality. As a strategy for greater equality recurrent education policy is insufficient without measures affecting equity relations in the workplace. Schuller and Bengtsson (1977: 636) indeed write that "for recurrent education policy to be coherent it must be constructed in coordination with various public and employment policies with affect the work and leisure of the population". The design of policies intended to promote equity relations in the workplace, perhaps along lines of action rather similar to those spelled out by adherents of the "economic and industrial democracy thesis", is dynamically related to and reinforced by the initiation of coherent recurrent education policy.

Long-term structural and technological changes imply a central need and capacity for learning and relearning. In the context of change in the structure of jobs and work processes, and in the composition and demands of the labor force, "the economic arguments supporting recurrent education are more forceful and applicable today than they were in the optimistic days of the early 1970s when recurrent education and training merely was a byword for educational reform" (OECD, 1985: 25).

Table 3.2 Recurrent Education in the Context of Stages of Development

Key- aspect	Ecology: Nation-state	Context A: Workplace	Context B: Educational System
Formation	Institutionalization of political and civil rights, urbanization.	Rapid industrialization and differentiation of work, labor market segmentation.	Democratization of compulsory schooling and equality of educational opportunity.
Growth	Social democracy and the institutionalization of social rights and social security schemes.	Collective bargaining and full employment, women and a further segmentation of the labor market.	Extension of compulsory and post-compulsory schooling, comprehensivization of education, centralization, curriculum reforms.
Consolidation	Growth of the service state bureaucracies, further institutionalization of the welfare state, emphasis on outcomes and redistribution.	Institutionalization of labor relations; codetermination and equality in the workplace, the demand for industrial democracy and redistribution of work.	Diversification and vocationalization of education. Institutionalization of mass higher as well as adult education. Decentralization of educational control.
Transition	Welfare state in crisis and the move towards the post-industrial high tech state.	Decline of industrial sectors, deteriorating labor relations, unemployment and overproduction, negotiations concerning funds for innovation and investment.	Integration of the formal, informal and nonformal educational sectors, coordination and initiation of recurrent education and training system over the lifespan.
	High tech society	Economic democracy	Lifelong education

The validity of modernization doctrines, and especially of the concept of stages, has been subjected to severe criticism on both theoretical and empirical grounds. Kuznets (1963) lists five minimum requirements to be met by stage-analysis in order to be taken seriously. These are based on the observation that "stages are a classificatory device, governed by the working assumption that the generality of perception and invariance of analytical relations secured thereby, are maximized" (Kuznets, 1963: 23; also in Guthrie, 1980: 423). Most stage-analyses of development fail to meet Kuznets's criteria. Myrdal (1968) in particular dismisses stage-analysis as being ethnocentric and outrighteously teleological. Another weakness of the modernity thesis concerns the empirically weak basis for a causal chain linking education with acquisition of modern values (Fägerlind and Saha, 1983: 50). Hence the usefulness of the modernization doctrine in providing an uniform conceptual frame of reference for this study is limited. Rather than constituting one framework, modernization theory provides the means of exploring the questions surrounding recurrent education and training.

Modernization perspectives accomodate the analysis of changes at micro-personal and macro-societal levels. A micro level of analysis facilitates speculation about the linkage between the social-psychological terrains of job satisfaction, motivation and modernity, and job performance. Modernization emphasizes a manipulation of human motivation to perform, study or upgrade. Hence, as Carnoy (1984: 34) writes, individuals are implicitly placed on a continuum of social-psychological development from "traditional" to "modern", and in sharp contrast with "modern" capitalistic individuals, the norms and values of traditional individuals are viewed as nonrational on utilitarian grounds.

In correlational studies it has proved difficult to generate psychological correlates of responses to individual modernity (Smelser and Smelser, 1981: 644-50; and Holsinger, 1985: 3396). Also, an individualist conception of motivation is open to the objection that it overlooks social determinants of motivation (Kelly, 1982: 52). Sociotechnical theory (Trist and Bamforth, 1951) presents sources of inspiration for modernity theorists. The theory suggests that production systems should not be seen as either a technical or a social system but as an interactive sociotechnical system. Sociotechnical and modernization theory see technological innovation, rationalization, mechanization of production and individual and social-relational patterns of modern value-systems as the primary sources or determinants of growth and development. Since education is central in forming and transmitting values, it follows that its role in fostering non-cognitive traits such as work habits, patterns of consumption, entrepreneurial attitudes, and leisure time activities, is equally important as its formal task of producing knowledge and skills. Given the far-reaching impact of technology on all aspects of modern life, including the danger for a degradation of skill requirements, in addition to equity concerns in relation to the intensification of the dual labor market, and the concentration of demand for flexible and democratic education, the provision and active promotion of recurrent opportunities for learning constitute essential aspects of a modern economy which relies on a balance between physical and human capital.

3.4 Human Capital Theory and Recurrent Education

The human capital theory postulates that the most efficient path to the national development of any given society lies in the improvement of its population, that is, its human capital (Fägerlind and Saha, 1983: 18). Human capital, then, refers to an investment in education. Basic to this theory is that somehow earnings reflect increases in productivity between people with different amounts of schooling. It is claimed that there exists a link between, at the micro level, education, productivity and earnings; and at the macro level between the amount of education posessed by the labor force and GNP growth. Thus, all productivity-relevant differences between individuals are an expression of the amount of human capital acquired by means of an investment in recurrent education and training (Schultz, 1968; Becker, 1968; Mincer, 1968; Stoikov 1975; Bowman, 1978).

Economists have been attempting to explain the residual factor in the growth of output in terms of technological innovation and human resource development. When increases in capital and technology are controlled for, a substantial percentage of the variance in the production of goods and services remains unexplained. In many industrial societies, observed age-earnings differentials are said to correspond closely to differences in productivity and in the amounts of formal education acquired. It is therefore suggested that the one is a consequence of the other. Human capital theory postulates that quality increases of the labor force account for a proportion of the unexplained variance in output (Denison, 1962). It emerges that the human capital theory is capable of dealing with a macro-societal and a micro-individual level of analysis. Blaug (1976a) refers to these as the private vis-a-vis the social calculus. According to Blaug (1976a: 27) age-income profiles reveal three striking general characteristics regardless of the society from which the data are obtained: (1) Irrespective of level of education, all profiles increase with age up to a maximum point somewhere after the age of forty and then level off or even decline; (2) The higher educational attainment the steeper the rise in earnings throughout the early phases of working life and usually, although not invariably, the higher a starting salary; and (3) The higher educational attainment, the later the year at which maximum earnings are reached and the higher retirement income. Schultz (1968: 17) adds this observation: profiles tend to be steeper for skilled than for unskilled workers. This could be a reflection of the amount and quality of on-the-job training.

Fairly recently, conceptions about the types of human capital components to be included in "production functions" have been widened. Not only have new aspects of human capital been taken into consideration, but the key-factor, formal schooling, has been subject to challenge (Simmons, 1980a). Relative to these and other developments, the recurrent nature of non-formal and informal education and training is increasingly being stressed (Schuller and Bengtsson, 1977). Some human capital economists even argue that economic returns to on-the-job and in-service training are rather similar to those accruing from investments in formal schooling (Becker, 1968; Mincer, 1968).

Becker (1968: 184-185) writes: "theories... almost invariably ignore the effect of the productive process itself on workers' productivity. Many increase their future productivity by learning new skills and perfecting others while being on-the-job". Factors other than those pertaining to the immediate career or to workplace production; that is, other than those pertaining to training of the type provided by single employers or their state-operated equivalences, such as for example those aspects of life-wide learning which do not imply linear relationships with production and output, have come to the fore of research attention (Vinokur, 1976). Basic to a discussion of recurrent education in a human capital context are issues of investment versus consumption and of a private versus a social calculus.

The investment-consumption debate is a difficult one in many respects. In general, human capital theorists regard education in terms of a long-term investment which eventually positively affects productivity. As the original formulation of the OECD indicates, the recurrent education and training proposition is closely tuned to economic considerations in relation to the labor market. This approach suggests to analyze the rationales for recurrent education from an investment rather than from a consumption perspective. A powerful though rather inconclusive argument supporting the thesis is that any kind of educational activity eventually may affect human capital formation in some sense. Even in case these activities apparently relate more to general and leisure-time related goals than to career-related ones, in a roundabout way, they may have a bearing on quality of working life which in turn may affect job satisfaction and productivity. Once the need to consider the investment thesis in a non-linear manner is established, and the need to relate recurrent education to the goals of social policy at large is recognized, human capital perspectives may become modified to the extent that they accomodate economic returns to investment in education, as well as other benefits in terms of equity and participation which may be unanticipated or unintended effects of an a-priori economic investment in recurrent education.

The notion of rational human behavior constitutes the perhaps strongest denominator of human capital theory. When applied to education, the rationality thesis translates into efficiency concerns. A cost-benefit analysis relates to determining costs and benefits associated with educational programs. One of the first distinctions made in the literature on cost-benefit and rates of return analysis is that between a private and social return. Private rates relate the cost of education as incurred by the individual to the benefits of education as realized by that same individual. Social rates are similar except in that taxes and the subsidiary costs of educational provision incurred by a given society are to be added to net earnings streams (Psacharopoulos et al., 1973: 21-22). Principles of recurrent education entail the postponement and extension of educational services. With a view to already sky-high educational budgets and the manifest phenomena of overeducation, credentialism and underemploment, a fundamental question relates to the possible benefits accruing to further investment in recurrent education relative to its private as well as social costs. With regard to the private calculus, Schuller et al. (1977: 641-42) write:

"The difficulty of isolating the impact of education on age-earnings profiles drastically impair the accuracy of the rate-of-return approach as an estimate of the true yields to an investment in education".

A similar case may be made with regard to macro-level economic analysis. However, irrespective of the potential of recurrent education for alleviating problems often associated with labor market policy, and although a case against recurrent education may empirically be ill supported indeed, the inadequateness of contemporary financing mechanisms for recurrent education will remain, unless, somehow, non-utility and consumption education will pay off in terms of different sets of investment targets.

Human capital theory raises arguments both in favor of as well as against the recurrent education proposition. Arguments in favor are, generally speaking, that (1) the amount of acquired education correlates with lifetime earnings. It would appear, therefore, that an individual would benefit from acquiring an additional amount of education and training later during his or her working life history; (2) the notion of depreciation of human capital through non-use or by the generally decreasing value and usefulness of previously acquired skills could mean that one may benefit from participation in recurrent education or training especially during mid or late career; (3) obsolescence of human capital with proceeding age implies a risk for lay-off or for career discontinuation; (4) recurrent education could affect positively a situation of pending unemployment or underemployment. Finally, literature indicates that the first job constitutes an important determinant of future occupation and incomes. A fourth argument in favor of recurrent education relates to the notion that occupational choice may become less difficult within a recurrent education framework. That is, the choice of a career path and thus of a line of motivated study may become easier in case work experiences are gained prior to embarking on higher education (Stoikov, 1975). Other points in favor of recurrent education relate to the issues of external efficiency in education. Investment in recurrent education may lead to the creation of short-term employment buffers, and may in a long run act as an anti-cyclical instrument of employment policy by responding to demand and supply on the labor market (Schuller and Bengtsson, 1977; Levin and Schütze, 1983). Some claim that recurrent education schemes, by altering the skills composition of labor, may boost employment opportunity without increasing inflationary pressure (MacRae et al., 1971).

A framework for the analysis of recurrent education in a human capital perspective is presented in Table 3.3. Horizontal and vertical interaction dynamics between the alternative motives and modes of recurrent education delivery are indicated. These rationales present a possible interpretation of human capital perspectives in relation to motives associated with recurrent education and training. Socio-cultural, economic and political dimensions of rational choices for investment in education in relation to production and manpower efficiency are indicated. Some major sources of inspiration are Stoikov (1975); Kallen (1979); the OECD (1975b and 1979); Levin and Schütze (1983); and Timmermann (1983).

Table 3.3 Some Motives, Forms and Audiences of Recurrent Education and Training in a Consensus and Equilibrium Perspective.

Interaction Dynamics	Socio-Cultural Dimension	Economic Dimension	Political Dimension
MACRO Motives	Societal Cultural Returns Socialization: improving cultural participation. Education & training as a social investment for promoting social understanding and cultural identity.	Societal Economic Returns Adaption to production: improving economic participation. Education & training as an economic investment for improving the quality of the labor force, productive efficiency, inclusion of the 'reserves of talent'.	Societal Political Returns Legitimation: improving political participation. Education and training as an investment in an improved and informed citizenry of modern democratic society.
MESO Principal Forms and Clienteles	Basic knowledge and skills, non-competence general education and training related to culture, the family and leisure activities. Targets vary. Especially persons without much cultural or economic resources.	Competence and/or credential job and career related on-the-job or in-service types of education and training for workers. Target: labor force. The reserves of talent: unemployed, unskilled, new entrants, women.	Political education enhancing the knowledge, skills, values and information-seeking behavior necessary for participation in decision-making. Targets: persons without much political resources.
MICRO Motives	Private Cultural Returns: fuller cultural life, improvement of the quality of life: intellectual, social and physical well-being; compensating for desintegration of family and alienation.	Private Economic Returns: gaining knowledge and skills for career mobility and workplace satisfaction. Status improvement in terms of economic benefits and private secondary returns.	Private Political Returns: to utilize available political resources for influencing the immediate socio-economic and political environments into a desirable way and direction.

Neo-classical economic theory pin points various difficulties inherent to recurrent education. The theory considers a linear relation between earnings profiles and educational atainments. It implies that the longer acquired educational resources may affect a career the higher life-time earnings will be. A postponement of higher education with a number of years may affect age-incomes curves negatively. Another issue is whether recurrent education is feasible in that it demands an allocation of private resources at a point where individuals may face other financial commitments. Also, employers may prefer to invest in the upgrading of younger rather than elderly employees because an investment in the latter may shorten the period over which eventual economic returns are to be collected (Stoikov, 1975). A further issue relates to whether an investment in recurrent education may result in a lower social rate of return relative to an investment in other public policy domains. Coombs (1970: 44) criticizes cost-benefit approaches to education. He points to the limitedness and homogeneity of the variables used, and to the rational choice thesis which essentially degrades human beings to mere materialists. Initially it was on-the-job training rather than formal instruction which was regarded as the "paradigm case of self-investment" (Blaug, 1976b: 836). Basic criticism of the investment thesis behind recurrent education relates to whether a lower, or sometimes even negative, return corresponds to or contradicts increased demands for schooling.

Recurrent education has implications for the manpower approach to educational planning. Fulton et al. (1982) contend that the difficulties of planning originate with these issues: (1) the unpredictability of technological progress; (3) the difficulty of assessing the specific skills required by the labor market; (4) the dilemma implied by a trade-off between specialization vis-a-vis generalization and quantity versus quality; (5) the problems of ensuring a smooth path for educational development while at the same time overcoming specific manpower shortages as quickly as possible. Fulton et al. (1982: 107) write "to be able to distribute higher education throughout the lifetime of individuals instead of concentrating them prior to entry into the labor force constitutes a contribution to solving problems confronting manpower planners". Recurrent education introduces a more flexible interaction in that it increases the degree of correspondence between education and the workplace. Shortening of the time horizon needed for planning purposes constitutes a major by-effect of a recurrent education system.

In conclusion, arguments pro and contra recurrent education as offered by a human capital perspective-in-isolation may point to the overall limitedness of this neo-classical model. A more radical and critical interpretation of the political economy of recurrent education and training is presented in subsequent paragraphs. As a prelude to this third theoretical perspective on recurrent education, Karabel and Halsey (1977: 13) observe:

> "But what must further be remarked about the theory of human capital is the direct appeal to pro-capitalist sentiment that resides in its insistence that the worker is a holder of capital (as embodied in his skills and knowledge) and has the capacity to invest (in himself). Thus, in a single bold conceptual stroke, the wage-earner, who holds no property and controls neither the process not the product of his labor, is transformed into a capitalist".

3.5 Recurrent Education and Radical Critiques

Especially during the late 1960s and the early 1970s, and as a result of a variety of interrelated factors, education theory faced a relatively new influx of largely politically committed ideas stemming from all domains of the social sciences. Some of these, such as for example the impact of Sartre's humanist marxism on the development of interpretative and phenomenological action paradigms, were essentially external to the field of education. Others, such as the revival of individualism and student revolts in the 1960s, were not. The impact of developments internal and external to education has been instrumental to a widening of the scope and direction of the so-called "new left" approaches to educational research and policy. Education is political because it strongly reflects various wide-ranging and often conflicting preferences of society (Kogan 1975). The "political economy of education" has to do with at least four major issues: (1) the roles of education in allocating social privileges; (2) the normative roles of education in transmitting social beliefs and values; (3) the relationships between education and social change; and (4) educational claims on the allocation of public resources (Weiler, 1985: 382-96).

Education forms an integral part of these issues. Thus, it has a potential for becoming a source of contradiction. Discontent with the roles of education led social scientists to "examine education not as reflecting the needs of society but rather as expressing dominance of one social group over another" (Banks, 1976: 115). A Weberian tradition sees education in the context of competing status groups struggling for wealth and power to manipulate strategic resources. Marxian approaches stress the significance of class struggles and reproduction of norms and social relations. (Karabel and Halsey, 1977: 35). The critical examination of roles of recurrent education in society centers on interaction processes between education and work. Table 3.4 presents, from a radical perspective, a summary of interaction dynamics between the workplace and education structures. It is partly based on Paulston (1976: 22); Karabel and Halsey (1977: 35); Kelly (1982: 173); Fägerlind and Saha (1983: 141); Carnoy (1984); Carnoy and Levin (1985). The purpose of this Table is to describe, from a critical angle, how the roles of work and education correspond in terms of rationales, view of man, unit of analysis, preferred mode of reform and projected outcomes. It emerges that recurrent education is seen as subordinate to demands of the workplace and functions to reproduce the social relations of production.

Carnoy and Levin (1985: 20) contend that, although traditional functionalist views of education argue that school structures and practices correspond to those of the workplace, these fail to address the specifics of why and how correspondence occurs. The schools are seen as reproducing by means of the curriculum and differential treatment the skills, values, and ideologies pertinent to legitimizing capitalist modes of production. One function of education is to reproduce and legitimize the power relations in society. Preconditions for social reproduction to occur are (1) education necessarily has to appear in a neutral

Table 3.4 Radical Views on the Education and Work Dynamic

Feature	Workplace Organization	Educational System
Rationales	Workforce is kept subordinate to the needs of capitalist employers. Reproduction of relations of production serves to legitimize and maintain the capitalist status quo of society.	The educational system is subordinate to the needs of capitalism and serves to reproduce unequal social relations.
View of Man	Class perspective view of the worker as a product of historical forces rooted in material conditions.	Students as objects and outcomes of a historical process aiming at socialization, intergenerational transmission of interests and values, and reproduction of social relation
Unit of Analysis	Power and interest conflicts operant in the dual labor market, the transnational world economic system, and the correspondence and contradiction in the functions of capitalist state aparatuses and workplace structures.	Differential educational treatments as an outcome of the historical struggles between political, economic and sociocultural forces in society. Dialectics of reproduction vis-ä-vis democratization functions of educational systems.
Preferred modes of Reform	Participation as a first step to the democratization of social relations of production. Worker reforms that will give labor greater control over job content and management process.	More equal participation and less differential treatment as steps toward a more democratic educational system. An extension of educational services into the adult spaces of life.
Reform Outcomes	Economic and industrial democracy and the elimination of all structural inequalities both in the relations of production and the society at large. Equity-oriented redistribution and an improvement of the quality of life.	Equal educational opportunities and in some cases positive discrimination. An elimination of educational priviliges. Comprehensivization and postponed differentiation; establishing lifelong or recurrent education for all.

disguise; (2) education has to operate relatively autonomous from other social associations; and (3) education should have legitimate authority in society (Bourdieu and Passeron, 1977; Nyström, 1985). Schools reflect social conflicts and struggles for economic power. It is outside the scope of this chapter to review the relative differences between alternative "conflict" interpretations of recurrent education. A radical critique of recurrent education mainly comes in two forms, related to its nature respectively its significance. Table 3.5 below presents a critical interpretation of recurrent education and training.

Table 1.5 Radical Critiques of Recurrent Education and Training

Criticism	Nature of Recurrent Education	Significance of Recurrent Education
Social criticism	Recurrent education essentially contains "nothing new"; it serves as a tool for reproducing social inequalities; it is a form of scientific management meant to serve economic and manpower needs of the capitalist overclass; it claims to further social democracy but is in reality solely concerned with productivity and with the creation of pro-capitalist personality traits of employees; it will reinforce the social and cultural alienation of people	Recurrent education has little impact on equalizing society due to promotion of differential educational treatment and differential participation patterns Recurrent education is constrained in its application by social realities; it does neither change the nature of work nor the division of labor; it will not lessen but promote the mental/manual divorce by distinguishing between the modes of "education" and "training"
Economic criticism	Recurrent education claims to be concerned with economic democracy, with redistribution of resources, with job-satisfaction, with human growth and workplace humanization, and with upward career mobility; but is in reality concerned only with profits, technological innovation, productivity and labor force adaptation, lessening of costs and speeding-up the production process; it increases job-competitiveness between the workers	Recurrent education generates a wide range of social and educational costs to be largely borne by the employees; rationalization will further alienation and dehumanization of production; it will increase rather than lessen underemployment and unemployment; it is a confidence trick that secures managerial interests while ignoring those of the worker underclasses while keeping the workforce docile; it increases the general costs of education
Political criticism	In reality recurrent education is a more subtle and insidious instance of employer and management control over the workplace and the educational process; by favoring collective bargaining agreements it will be contrary to the real needs of worker underclasses; it will compromise and sell out worker interests; the state apparatus and employers gain more power over workplace and educational processes and will strengthen rather than lessen alienation, centralization and bureaucratization	Recurrent education claims to be a guiding principle for the comprehensivization of the educational field; instead of unification it will promote differentiation and diversification in education and work; it will thus reinforce social inequality and fundamental competitiveness instead of the social solidarity needed; recurrent education will not concede the degrees of autonomic control by the community over work and educational processes that it claims

Source: Partly adapted from Kelly, J. (1982: 184-92)

Recurrent education may have a potential for allocating social statuses, and thus, for reproducing the existing social order. Evidence suggests that acquired level of education determines socioeconomic success. Recurrent education may, therefore, not only reproduce but even reinforce social inequality. The roles of recurrent education may, perhaps, not significantly differ from those of front-end schooling with regard to reproduction. Recurrent education does not necessarily make a difference in furthering democratization processes in society unless policy instruments positively favor underprivileged groups. Although the principles of recurrent education are frequently interpreted in terms of their potential for the promotion of cultural, political, and economic and industrial democracy, it may well achieve opposite ends. That is recurrent education may augment competition and conflict among workers. Employees in different segments of the labor market may not necessarily obtain equal chances to use recurrent education. Gains accruing to workers under a system of recurrent education could be of a short-term nature only. Whereas workers may bear a disproportionate share of the costs in terms of physical and financial inputs, wider economic benefits may accrue to the holders of capital.

Apart from immediate economic gains generated by productivity increases, employers may continue to pursue the objective of further rationalizing production structures. An increased use of technology may actually reduce general demands for manpower (Rumberger and Levin, 1984; Carnoy, 1985). In addition, apart from an increased danger for lay-offs and underemployment, the skill required to perform many job tasks may be reduced. Gains in terms of productivity increases necessarily demand a price. It could be the case that costs for recurrent education are to be borne by workers in terms of either the underutilization of their educational knowledge and skills, an increase in general job uncertainty, more alienation and segregation, diminishing prospects for upward mobility for a majority of workers, more competition, and reduced space for collective bargaining.

Critics are also concerned with the distribution of political and cultural resources in society. Gains of a political nature could, for instance, come with the legitimation of capitalist ideology. Cultural benefits, although difficult to delineate, could accrue to social groups in a variety of ways. Better-off groups may, for example, be more inclined to fully utilize any opportunity for subsidized leisure, including education, than less well-off. Hegemony may be reinforced by applying methods of rewarding, in terms of career prospects and pay increases, those qualities and personality attributes considered crucial to the maintainance of capitalist relations of production.

The implementation of a system of recurrent education requires reforms of educational structures and curriculum practices. It depends on ideological allegiances whether a reform involving recurrent education is seen in terms of functional legitimacy and structural reproduction, thus limiting any interpretation of the scope of the reform efforts to only minor innovations in the prevailing system, or alternatively, whether the application of recurrent education principles is seen as a means of attaining major social reform objectives. Since the initiation

of recurrent education may inhibit the formulation of a more radical approach to educational reform, its implementation has implications for the wider societal context in which education operates. In terms of resource allocation, recurrent education may bring to the fore conflicts between various sectors of the whole educational field. Rather than facilitating coordination and integration, further diversification may be an unintended consequence of implementing recurrent education.

3.6 Concluding Remarks

Perhaps the most important observation which emerges from the presentation of theoretical perspectives relating to recurrent education and training is that there exist various alternative interpretations as to its usefulness, relevance, and meaning. It is not the aim of this study to underwrite any one of these in isolation of the others. The perspectives discussed; e.g., the one-dimensional structural-functionalist modernity thesis, the neo-classical human capital theory, and radical critiques of recurrent education, are considered valuable with regard to their contribution to the clarification and conceptualization of issues surrounding the rationales for recurrent education. Limitations are basic to each theory reviewed. However, shortcomings may also serve a purpose in expressing and clarifying the functional meaning of recurrent education in society.

Consensus and conflict theories are most commonly presented as competing ideologies or, alternatively, as juxtaposed bipolar extremes in a continuum perspective. Nevertheless, thrusts of contemporary argument appear to favor the integration of these extremes into a dialectical model. The effort to conceptualize recurrent education may, perhaps, be facilitated by adopting a multidisciplinary and dialectical approach. Common elements of a dialectical framework are constituted by the notions of non-equilibrium, interaction, reciprocality, and non-linearity in terms of developmental functions affecting education and work.

Hoppers (1985) stresses the usefulness of analyzing the actual articulation between social status groups, the segmentation of the labor market, and access to work and recurrent education. It is considered highly important to indicate how motives and rationales for recurrent education are subject to development.

A frame of reference is needed which is capable of explaining the dynamic of consensus and conflict in the process of formulating public policy, including those pertaining to recurrent education and training. The search, then, is for a theoretical approach which will leave such meaningful components as human sovereignty intact. Apparently, with regard to the "problem of human dignity", it appears essential to consider the issue of the point of anchorage for an analysis of recurrent education in terms of macro-societal or micro-individual constructs, as well as the question of the degree of relative autonomy of the structures of recurrent education and training in society.

Chapter 4.

CONCEPTUAL FRAMEWORKS

4.1 Introduction

This chapter presents a theoretical framework for the analysis of the dynamics of recurrent education and work based on the principles of dialectics. In a dialectical framework, various key-aspects of importance for illuminating the dynamics of the process whereby alternative rationales for recurrent education are formulated should be taken into account. These key-aspects comprise, among others, interest groups, labor market segments and work positions, the legal framework, existing educational structures, and the availability of cultural, political, and economic resources. Some functional aspects of importance are facilitation and inhibition, socialization, politicization and legitimation. Figure 4.1 presents the basic conceptual scheme. Figure 4.2 displays a conceptually identical model indicating the three levels and dimensions of analysis: macro-meso-micro levels within their cultural, economic and political contexts. The second Figure constitutes an extended version of the basic scheme. It concentrates on structures of recurrent education and training and their training processes and outcomes; and in particular, on the micro-spaces of individual human action.

4.2 Dialectics and Recurrent Education

Given an ongoing clash between relatively distinct ideological explanations as to the nature of man and his relationships to society and social change, efforts to attach major conceptual emphasis to differences between paradigmatic orientations may prove a thankless and possibly not productive undertaking. The dialectical model of man and society stresses the importance of unification or synthesis, which is seen as the product of a continuous flow of interaction between forces in opposition: the thesis and the antithesis. Being the subject of rhetorics, interpretations of the principles of dialectics vary according to one's metaphysical allegiances and the importance attached to materialism. A distinction is invariably made between Hegelian and Marxian dialectics. For the purposes of this study it may suffice to mention that dialectics often is understood as any play of ideas bringing together opposites of apparent contradiction and resolving these by way of a continuous unification into a more and more developed position that contains an element of both original opposites. Thus the interplay between forces in a process of becoming rather than being is stressed. For example: education is the product of society, then acts on society bringing about change, which acts again on education.

In the above mentioned example, the point of departure is in a first instance the social structure of society at large. At a more complicated level of analysis, social change is explained by ongoing interaction between various social structures. This perspective accomodates the analysis of micro-spaces of human action in relation to surrounding social structures. The model is essentially holistic; it extends from a restless individual to the global forces of the society as a whole (Noonan, 1984). The idea that societal needs represent an accumulation of the needs of individuals facilitates the inclusion of a human component in the analysis. Individual needs are at the center and encircled by organizational needs which are in turn surrounded by community, societal and planetary needs. The individual and his need, demand and perception lie at the heart of the system and are the vehicle through which change is wrought (Boshier, 1986: 20). Human interaction and role-taking, aspirations and value systems, thus become a meaningful component of analysis.

Interaction processes taking place between persons in groups, and at a more complicated level between individuals and social institutions, can only be inferred (Newcomb et al., 1966). The properties of individuals constitute the basis of the model in which the notion of interaction between forces-in-opposition occupies a central place. Interaction mediates between many of the properties and attributes of individuals, face-groups, the workplace and educational structures. One problem concerns the degree to which the interaction processes are interdependent, reciprocally contingent or relatively autonomous. In a dialectical frame the notion of a definite anchorage and a principal direction of interaction becomes, at least partly, irrelevant. Instead, emphasis is put on the reciprocality of interaction. Accordingly, the notion of a definite anchorage of analysis is substituted by the notion of contradiction. One contradiction arises because the individual lies at the heart of environmental change while being contradicted by the concept of behavior modification through externally regulated forces such as, for instance, schooling. A principal contradiction relates to the notion that "education is an agent and a recipient of change". Especially during a period in which rapid development occurs, contradictions are likely to become visible in terms of crisis phenomena. Indeed, Carnoy (1976: 115) contends that contradictions, which refer to the existence of opposing forces within a particular process, are nowhere more visible than in periods of societal transition. Perhaps, ingredients of the transition presently encountered in terms of the post-industrial information society are an expression of the "crisis of the welfare state" (OECD, 1981b). These "ingredients of transition" refer to such phenomena as unemployment and underemployment, further rationalization of production structures, and overeducation.

The interactionist-dialectical perspective on change outlined above constitute the basis for a holistic framework which, it is hoped, is capable of dealing with interaction dynamics and contradictions between components at three levels of analysis. Interactions are conceptualized as taking place between macro-ecological, meso-contextual, and micro-environmental levels of analysis. Essential is that interactions are conceptualized as interdependent rather than as top-down or bottom-up oriented.

In a study of non-formal training and employment structures in Zambia, Hoppers (1985: 25) writes:

> "Since it is recognized that the various theories outlined above are preoccupied with themes that, in varying ways, are important for an understanding of the functioning of non-formal training, it may be useful for our purposes to view them as being concerned with three levels of analysis. Two such levels have already been identified: the macro-level, where we deal with theories related to the wider society, and the micro-level, with theories related to individual perception and action. Theories about aspects of non-formal training can better be put into proper perspective if placed at a separate 'meso'-level between the other two; they occupy themselves with the more immediate social environment, with important linkages both upwards to the wider socio-economic structure and downwards to individual people".

Conceptually, the three levels of analysis comprise:

(1) The macro level of analysis refers to the socio-cultural, economic and political dimensions of a given nation-state. The macro level of analysis also applies to the wider contexts in which a given nation-state operates. That is, the planetary or global relationships between central and peripheral societies of world economic, political and socio-cultural systems. These three societal dimensions are, at the macro level of analysis, collectively referred to as an "ecological state". The concept of ecology denotes the entire network of relations specifying the characteristics of a given nation-state. Some key-aspects at the macro level are the forcefields in terms of interest or status groups and the social relations of production.

(2) The meso level refers to the socio-cultural, economic, and the political dimension of organizational structures operating within the boundaries of a given society. Institutional structures mainly refer to formal and non-formal modes of recurrent education and training. The three dimensions in which schemes of recurrent education and training operate are, at a relatively distinct meso level of analysis, collectively referred to as the "context" of principal communities of interaction.

(3) The micro level of analysis refers to the individual life-spaces of human beings. Economic, political and socio-cultural dimensions of human life-spaces are collectively referred to as the human environment. The concept of "environment" denotes the human life-span in that it comprises value systems, human actions and perceptions, orientations and experiences, as well as the phenomenon of human participation in the workplace, in recurrent education, and in leisure time activities.

Figure 4.1 presents the three dimensions of analysis and their external dialectical relationships. At a micro level the human environment is indicated. These life-spaces are in continuous interaction with the contextual setting of education and work. Structures of social organization, which shape environment and ecology, are in turn affected by socio-cultural, economic, and political realities. This scheme is an extension of Fägerlind and Saha's (1983: 196) model of education and development.

Figure 4.1 The Conceptual Model

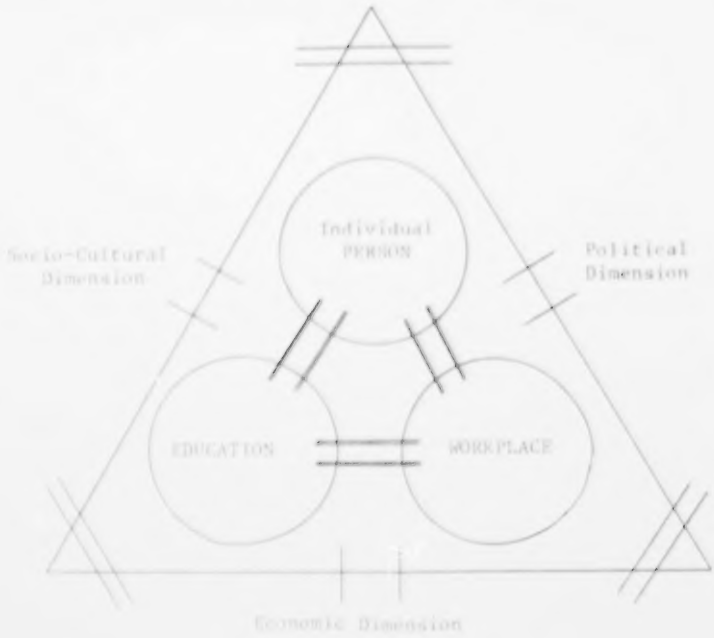


Figure 4.2 below presents an extension of the basic conceptual model. It is hoped that this model will facilitate the identification of the levels at which, and dialectical mechanisms by which, development occurs. Perhaps, by inserting attributes of specific policies into appropriately corresponding boxes, the dialectical connections between the large-scale expressions of social action and human micro-spaces may become visible. Three levels of analysis and their dialectical relations are indicated. Schematically, each of these levels represent one part of the hierarchical continuum of social organization. Interlocks between the separated levels exist only by way of abstraction. So-called first order external dialectical relationships refer to macro-meso and meso-micro dynamics and vice versa. A second order dialectical relationship operates between components at one level. An example of a first order dynamic is the relation between workplace structures and on-the-job training schemes. An example of second order dynamics are the mutually dependent interactions occurring between formal and non-formal education structures. Apart from the external interactions taking place between two or more social organizations at a particular level of analysis, also internal interaction processes are conceptualized. An internal dynamic refers to the within-operations of corporate agents in a historical perspective: for instance, an interaction sequence consisting of targets operationalization, resource allocation, institutional processes, and outputs.

In addition, Figure 4.2 could be approached with the intention of identifying relatively stable points or certain components or events of a longterm developmental trend to be investigated at some precisely defined points in time (t= 1, t= 2, t= 3). In this way, any position on the horizontal axis refers to the anchorage of analysis in time. The vertical axis also concerns top-down versus bottom-up approaches. A top-down oriented analysis essentially takes place from ecology to environment. The bottom-up approach basically occurs in the opposite direction. It may be difficult, however, to establish a clear conceptual borderline between these two approaches.

Hoppers (1985: 25-32) writes that it is essential to identify, at the macro level, the different employment structures. These should comprise the nature of the work activity and relations of production. At the meso level, modes of recurrent education delivery may be approached with the intention to discern their degrees of correspondence and contradiction with the relations of work. At the micro level the nature and the significance of recurrent education and work in an environment of human action and perception ought to be analysed. Hoppers (1985: 26) writes that "people's own perceptions mediate the interaction between actions and the structural environment. Thus action and choice are not related mechanically to objective interests but conditioned by individuals' own interpretation of their situation".

Hoppers' conceptual framework (1985: 27) facilitates inclusion of issues with a relevant bearing on the analysis of recurrent education and training. This scheme is adapted with a view to accomodating the wider socio-cultural, political and economic dimensions of the modes of recurrent education and training in Figure 4.2. This figure indicates, apart from the three levels of analysis, also some key-aspects that are of importance to a theoretical study of the dialectical process by which a system of recurrent education affects, and is in turn shaped by, the workplace. These key-aspects are ordened into two categories.

The macro-meso dynamic relates to interaction between interest groups, workplace structures and modes of recurrent education. Efforts to understand the interaction dynamic between economic and political forces, structures of work, and recurrent education, are enhanced by emphasizing the importance of the basic key-aspects of analysis: dual labor markets: legal frameworks, financing mechanisms, and ideas which emphasize the existence of functional interdependencies between recurrent educational institutions, and human perceptions and actions. Key elements of the perception-participation dynamic concern the notions of legitimation, socialization, allocation priorities, differentiation, politicization and institutional reproduction. Alternative approaches to the institutionalization of the recurrent modes of education are of central concern to the study of the interaction dynamics between the macro, meso and micro levels of analysis. Interaction dynamics between the major forces-in-opposition may both facilitate and inhibit ecological, contextual and environmental change. Multiple motives for recurrent education may be considered in terms of macro-level needs and demands of the workplace, as well as in relation to specific environmental needs and demands as perceived by an individual.

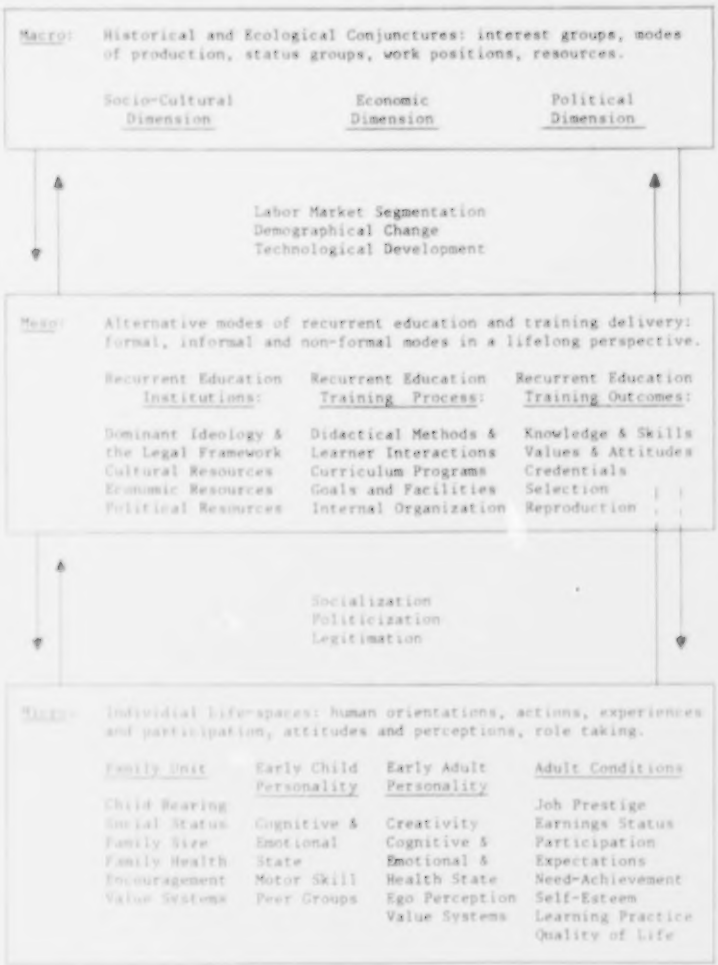
The arrows featuring in Figure 4.2 suggest plausible paths of operation leading downward from the societal superstructure to the recurrent education and training system and the individual person. Other arrows indicate paths of operation leading from the individual to the societal superstructure.

In a schematic way, interaction patterns operating in society between ecology, context and environment are on display. The interaction patterns refer to corespondence and contradiction in the relations between the workplace, alternative structures of recurent education and training, and human life-spaces. At the macro-level of analysis, the scheme indicates a so-called historical or ecological conjuncture. These conjunctures refer to a change in the constellation of power relations over time. That is, they concern political, economic and socio-cultural developmental trends. The notion of conjuncture emphasizes the importance of regarding the actual constellation of power differentials in a given society and over time as an explanandum. Crucial is the power differential between adherents to preservation and reproduction, and the progressives striving for the expansion of democratic principles in society. Polity affects recurrent education by partly determining the availability of resources. Depending on the ideological orientation behind any input of resources into the educative process, the outcomes of recurrent education may range from the strengthening of social inequality, via a perfect fit with reproduction, to promotion of democracy affecting social and labor relations. Alternative linkages between recurrent education, resources, processes and outcomes are based on a model forwarded by Levin (1976a: 174).

At the micro-level, elaborate chains of events indicate human life-spaces from early childhood to mature adult personality. On the basis of literature (Bengtson and Black, 1973; Lerner, 1976; House, 1981; Baltes, 1983) four major concepts have been selected for inclusion into the model: family of origin: early childhood and adult personality: and adult behaviors casu quo conditions. The life-spaces imply distinct roles for recurrent education, characterized by the different patterns of symbolic interaction between recurrent educational institutions, needs, demands, perceptions, and actions of the individual. Variables representing measures of the family of origin could be, among others, child rearing practices, health, social status, family size, urban grade, and parental attitudes, encouragements, and value systems. Early childhood personality is represented by, for instance, cognitive ability, motor skills, affective and emotional states, health, and peer group values. Some measures of adult personality could be creativity, autonomy, affective and emotional states, and health. Variables of importance to anticipating the antecedents and eventual outcomes of symbolic interaction between recurrent education institutions and mature adults are, among others, job prestige and earnings power, participatory profiles, expectations for the future, learning practices, family conditions, and self evaluations of quality of (working) life. In the model, these several phases of human development across the life-span are contrasted with recurrent education institutions, training processes, and outcomes: thus linking the formation of mature adult personality with the act of socio-cultural, political and economic participation.

Figure 4.2

A Dialectical Model of Recurrent Education and Training



Source: After Wim Hoppers (1985: 27) "From School to Work: Youth, Non-Formal Training, and Employment in Lusaka". The Hague: CESO.

Chapter 5.

RATIONALES FOR RECURRENT EDUCATION

5.1 Introduction

Chapter 5 concludes Part I of this study. The chapter presents some general and historical developments thought to have been instrumental to the gradual process of formalization of adult education and to the institutionalization of other non-formal modes of educational delivery. The second section presents a brief overview and discussion of motives often associated with educational policy at large and with the goals for recurrent education in particular. A third section deals with principles of contradiction and correspondence in the relations of education and the workplace. The fourth section is concerned with a discussion of alternative approaches and strategies for policy action with regard to recurrent education. The final section presents some concluding and perhaps also provocative remarks regarding the likelihood of implementing a system of recurrent education at some future date.

5.2 Education in a Changing Society

Especially in the 1950s and 1960s, rationales for a formidable investment in education were related to the assumed existence of a positive linkage between economic growth and educational expenditures. Initially, an investment in the human capital of a society was deemed necessary in order to supply the economy with an increasing number of educated manpower which, in turn, was considered the precondition for attaining sustained levels of rapid economic development. Although the formulation of the modernization and human capital theories spurred an allocation of resources to education, it would, according to Banks (1976: 16) be "a mistake to see the educational explosion simply as a mechanical response to the needs of the economy".

Other explanations are forwarded as well. For example, Isling (1980) indicates how ideological struggles between elitists or pragmatic pluralists and the populists or committed pluralists about the appropriate roles for education influenced both pace and direction of educational innovation and reform in Sweden. Other occurrences, such as fluctuating demographic trends and their impact on the demand and the supply of labor, challenged conventional views on the role and the meaning of education in society. These aspects have, together with changing economic realities, contributed to the introduction of a new principle for the distribution of education over the life-span, causing a new trend in educational enrolment (Bengtsson, 1979).

During the 1950s, and especially during the 1960s, almost all advanced industrial societies went through a complex series of developmental processes. Directly or indirectly, most of these processes aimed at, or alternatively were bearing a stamp of, the building of social security networks and the institutional welfare society. The rationalization of institution building, whether affecting the workplace or education, constituted the input for a conversion of needs and demands into policy flows for reform. Although rationalization of production structures affected all public policy domains, social demands in relation to equity, democracy, or the quality of working life, were not necessarily accomodated. With a view to the dialectical nature of the relations between education and work, rationalization of the workplace would appear, at least theoretically, to have necessitated thorough reforms in education.

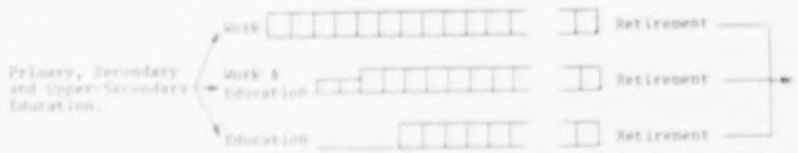
In the late 1960s, Coombs wrote about a so-called world crisis in education. Coombs (1968) asserted that the overall problems of imbalances between the demand and supply of education were partly due to the fact that "demand creates its own internal dynamic". Other problems concerned the growing obsolescence of curricula and the serious widening of educational inequalities between social groups (Coombs, 1968: 174-183). By 1985, when Coombs published his new work regarding the "world crisis in education", a rather different situation had emerged. Problems of the 1980s were related to other imbalances. The shortage in the supply of education characterizing the 1960s was turned in some sort of oversupply by the mid-1980s. A "mismatch" between the formal educational system and the needs and demands of the economy appeared to have deepened. These new problems concern youth unemployment, overeducation and the educated unemployed. In response to an alledged inadequateness of formal education, the non-formal sector further expanded. Any remaining optimism about the economic and political feasibility of implementing a major reform which would drastically alter the roles of education in society further deteriorated in the 1970s. The debates about plausible links between education and economic progress, social stratification, mobility, and reproduction of culture, excited a prolonged controversy (OECD, 1975a). Relative to the diminishing belief in formal education as constituting a tool for attaining multiple public policy goals, attention shifted to the non-formal modes of education (Bowers and Fisher, 1972; Coombs and Ahmed, 1974; La Belle, 1982; and Ahmed, 1982). With respect to the dependency of educational reform and policy on the wider dimensions of society, Simmons (1980b: 239) writes:

> "The forces that can be allied to resist changes in the structure and the nature of the operation of the educational system are among the strongest in society. It is for this reason that fundamental political and economic changes usually have to take place before basic educational reforms can occur".

Developments occurring in quick succession in communications, agriculture and industry have generated a functional challenge to educational systems. Even though the desirability of change is acknowledged, the current state of diversification of views about the pace and the direction of reform has, in addition to financial constraints, in many instances effectively inhibited the initiation of major reforms in the educational arena.

On a world-wide basis, policy makers have expressed discontent with the persistence of the so-called "front-end" models of education (Stein and Miller, 1972; OECD, 1973; Boyle 1982; and Rivera, 1983). An outstanding characteristic of this front-end model is its concentration of formal education in the initial phases of the human life-cycle, to be substituted on a more or less compulsory basis by the world of work. Figure 5.1 shows three front-end models of education. The first alternative (a) indicates the "classical" pattern of compulsory education and subsequent full-time work. Alternative (b) shows a period of part-time higher education or vocational training, also to be substituted on a full-time basis by the world of work. Finally alternative (c) presents the conventional pattern of full-time higher education unconditionally followed by full-time work.

Figure 5.1 Three Front-End Models of Education



Source: After Galtung, 1980b: 191.

The changing place of general theory in environmental social psychology led to a shift in emphasis from the use of global static indicators of student achievement to the deployment of dynamic process indicators in the scholastic effort to measure impacts of social interaction on various performance outcomes (Chinapah, 1983). The findings generated by research using new theoretical approaches and methodological tools have altered conventional theories of developmental psychology, especially in relation to the didactics of teaching and learning, as well as the perceptions concerning the relatively distinct phases of human development across the life-span. This "life-course" view is defined by a focus on development as a multidetermined process not limited to any particular stage of life but rather occurring from conception till death. In particular, its focus is on change and stability across the human life-span, paying attention to the socio-historical context of human development (Verdonik and Sherrod, 1984). The changing place of theory in developmental psychology has many implications for action in the field of education (Lerner, 1976; Buss, 1979; Schaie, 1979; Baltes, 1983;). Life-span educational psychology presumes that all the people from infants to adults and senior citizens are potential students and have to be educated (Reinert 1980: 10).

Changing views on the spaces of human action, heridity, mental ability, life-course patterns, and learning theory, culmunated in favorable attitudes towards the proposed alterations in the nature of educational institutions and the educational process

itself (Husén, 1969; Birren and Woodruff, 1973; Ahmed, 1982). Since the end of the 1960's, a worldwide movement to improve the efficiency, equity, and flexibility of education emerged. Its central concern was to focus on the whole range of human life-spaces, thereby paying attention to the idea of lifelong learning (Husén, 1974). Several alternative views on the roles of the educational system in the context of a learning society subsequently emerged. In summary, Ruhenson (1980: 1) writes:

> "Adult education has gained prominence at the time when much of the optimism of the 1950s and 1960s with regard to education has been eroded. Todays' deep-rooted pessimism concerning the role of education in promoting social mobility, as well as economic, political, and cultural development, reflects the limited outcomes of earlier reforms. Today we are involved in lifelong education, whereof adult education is the cornerstone that is promoted as the panacea for all problems facing educational systems".

5.3 Motives for Recurrent Education

When it comes to motives for the design and implementation of concrete strategies for recurrent education and training, some motives have received disproportionately much attention. These are to a large extent related to labor market considerations. The conventional approaches to the planning of education and training are complementary rather than opposed to new goals in relation to equity of participation (Rivera, 1983). Rationales pertaining to recurrent education are tightly interwoven with motives stressing cost-effectiveness and internal and external efficiency. In Table 5.1, Psacharopoulos' (1980: 21) taxonomy of goals for educational policy is reproduced. It constitutes the basis for the construction of a rather similar taxonomy of motives or orientations for recurrent education and training. The latter taxonomy is presented in Table 5.2.

Table 5.1 A Taxonomy of Goals for Education

A. *Traditional goals*
1. Generation of economic growth by:
(a) creating the required high-level manpower
(b) optimizing social allocation of educational resources
2. Satisfaction of social demand
B. *New central goals*
1. Provision of social justice by:
(a) improving income distribution
(b) reducing educational inequalities
2. Generation of employment
C. *New peripheral goals*
1. Self-reliance
2. Integration of formal and non-formal sectors
3. Participation

Source: Psacharopoulos, 1980: 21

The integration of formal and non-formal sectors of education poses a number of specific difficulties and challenges to the recurrent education and training proposition. The diversity of principles generally associated with recurrent education is a source of confusion. It partly accounts for a present lack of policy action concerning recurrent education (Tuijnman, 1986).

Among the most often cited goals for recurrent education, the contrast between efficiency and manpower concerns and those in relation to democracy and equality is sharp. Levin and Schutze (1983: 12-13) explicitly describe these motives for recurrent education: (1) increasing productive efficiency; (2) reducing unemployment; (3) reducing overeducation and underemployment; (4) promoting worker participation; (5) improving the quality of leisure; (6) reducing inequalities with regard to the disadvantaged; (7) improving social participation; (8) rescuing educational institutions; (9) de-schooling the post-compulsory educational system. It is evident that some of these goals are in contradiction with others. These contradictions become more pronounced in case additional motives for recurrent education are added. Some of these are (1) the promotion of cultural and political equity; (2) adaption to new qualification hierarchy; (3) encouragement of individual free choice; (4) a smoothening of the post-industrial transition; and (5) the creation of the "new" work ethos.

Because the principles of internal and external contradiction in education dictate the impossibility of arriving at a basic consensus and harmony between divergent motives and rationales of recurrent education and training, it is hard to conceive of one functional and systematic approach to the formulation and implementation of recurrent education policy capable of simultaneously addressing, not to say realizing, motives attributed to recurrent education. Table 5.2 presents an altered version of Psacharopoulos' taxonomy of goals for education with particular reference to general motives for recurrent education.

A purpose of this Table is to systematically order some of the main rationales or motives generally associated with recurrent education and training. As in Psacharopoulos' taxonomy (1980), the Table indicates three "ideal" approaches to rationales for recurrent educational policy: traditional, "new central", and "new peripheral" goals. In turn, the three sets of ideals are broken down into several categories. The Table specifies about nine goals for recurrent education and training with a bearing on two overall traditional ideals concerning the promotion of economic growth, respectively, satisfaction of social demands. In relation to the recurrent education thesis, the traditional ideals have initially been emphasized. In the 1970s, however, attention gradually shifted to other central ideals, such as the promotion of social equality and generation of employment. As mentioned by the IIEP (1984), although the traditional and the new central motives in relation to recurrent education and training orientations are important, in the 1980s, new primary goals concern the promotion of functional coordination, and if feasible, the broad integration, of the presently diversified educational sectors. A few orientations in Table 5.2 are adapted from Levin et al. (1983: 11) and Timmermann (1983: 99-05).

Table 3.2 A taxonomy of Goals for Recurrent Education and Training

GUIDING PRINCIPLES		RECURRENT EDUCATION AND TRAINING ORIENTATIONS
(a)	Traditional Ideals	
	Promoting Economic Growth	(1) Optimizing resource allocation and utilization in education
		(2) Creating the required high skilled manpower
		(3) Increasing productive efficiency
		(4) Facilitating adaption to technological innovation
		(5) Reducing economic dependency and promoting self reliance
		(6) Periodic revitalization and retraining of the labor force
	Satisfaction of Social Demand	(1) Providing opportunities for upward social mobility
		(2) Improving quality of life, work and leisure time
		(3) Providing general and specific education for all
(b)	New Central Ideals	
	Promoting Social Justice	(1) Improving distribution of political and cultural resources
		(2) Reducing educational inequalities
		(3) Improving equal distribution of economic resources
		(4) Improving participation of disadvantaged social groups
		(5) Reducing segregation of the dual labor market
	Generation of Employment	(1) Facilitating a new work ethos and workplace solidarity
		(2) Encouraging voluntary alternation between work and non-work
		(3) Promoting job creation through job sharing, self-employment and leave of absence for education and retraining
		(4) Balancing supply and demand for tertiary education
(c)	New Peripheral Ideals	
	Promoting Integration	(1) Improving integration of formal and non-formal, academic and vocational, sectors of educational services
		(2) Coordinating financing mechanisms and reducing unit costs
		(3) Encouraging didactical and pegagogical interaction
	Promoting Equal Participation	(1) Promoting the social, cultural, political, economic and industrial democratization of society by means of providing more opportunities for equal participation
		(2) Promoting social participation in the production of skill and knowledge

While education and employment policies are distinct areas of government action they also have important common problems and objectives. The acquisition of knowledge and skills by way of education and training and their application through work are two basic factors in the production of goods and services. In addition, education and employment heavily influence patterns of behavior, participation, and the welfare of the individual (OECD, 1977b: 17). Policies affecting education and employment are interrelated. They concern dynamic systems in simultaneous states of continuous transformation: capable of responding in particular ways to changes in human perceptions and actions. Probably, the most important rationales of recurrent education are linked to the world of work. The OECD (1977b: 5) refers to joint roles of education and work by stating:

> "The basic objectives of extending opportunities for education and training and utilizing them more fully throughout working life are to furnish essential resources for social and economic development, cultural progress, individual wellbeing, and to help promote the most free exercise of choice about the future forms of socio-economic development".

The overall goals of bringing education and working life into a new relationship which simultaneously promotes a variety of personal, economic, socio-cultural and political motives, and creates the preconditions for a consistent approach to social, economic and employment policies, are closely related to broad rationales for recurrent education and training (OECD, 1973). Reforms involving recurrent education and training are tied to the workplace and are conceptualized as essentially belonging to a "macro-technical reform category" (Levin, 1976b: 104; and Carnoy and Levin, 1985: 218). The macro-technical reforms are direct attempts to make the educational system more responsive to the immediate needs and demands of workplace organizations. In contrast to the "micro-political" reforms, which refer to a change in the internal governance of education with respect to rules, selection and control over resources; a macro-political reform alters the external governance of schooling. Carnoy and Levin (1985: 246) contend that "it would appear reasonable to believe that there will be a long-run substitution of training on-the-job for formal education, although the extent of this shift is difficult to predict". Though a closer correspondence between the workplace and education may facilitate the design of strategies for recurrent education, it does not imply that a work-oriented recurrent educational reform would accomodate new central ideals in relation to equity concerns. Levin and Schütze (1983: 22) write that "support for recurrent education tends to be fragile in case a comparison is made between goals and incompatible constituencies committed to designing systems of recurrent education". Figure 4.2 places recurrent education centrally between ecology and environment. Recurrent education policy reflects intermediate outcomes of macro-level struggles between forces adhering to divergent interests. Hence, clashes of opinion, which concern both the nature and significance of recurrent education, dialectically affect policy formulation. Recurrent education is characterized by a diversity of motives reflecting a variety of needs and demands expressed by policy makers and administrators, employer and employee associations, and last but not least, by the general public.

5.4 Strategies for Recurrent Education

Educational policy can not be seperated from the wider domains of public policy. The link between alternative strategies for recurrent education and the dominant ideological climates of a society as expressed by its marginal or institutional approach to welfare provision is clear. The OECD (1975b) suggests that coherent construction of policy for recurrent education could be made along two axes. The first concerns an axis along which adult education may be brought into phase with the periods of initial schooling and higher education. The second axis refers to the provision of education or training in coordination with labor market policy. An alternative typology posits strategies for recurrent education on an axis ranging from rather liberal non-interventionalist approaches to provision, to those which pertain to the institutionalization of public policy at large.

Savicevic (1985: 4234) identifies three types of approaches to recurrent education. The first comprises strategies seeking to expand adult education without touching the traditional educational system, and particularly, without provoking change that could threaten prevailing status quo. The second type consists of nations acclaiming the potential of recurrent education for social change without considering it necessary to reform other sectors of education. The third category consists of countries considering recurrent education a means for stimulating social change. Furter (1977) implicitly suggests that the analysis of policies seeking to apply lifelong education indicates that a distinction can be made between two conflicting views. Perhaps these may be presented as economistic and technocratic versus holistic and humanitarian positions, or, more pronounced, the "employable skills" versus a "learning society" point of view.

Dialectical forces in society shape and are shaped by a system of education with disregard to whether the system is organized conventionally or runs along alternative lines as implied by a system of recurrent education. OECD member states have adhered to principles of recurrent education. Nevertheless, stress put on the formulation of policy has been much less pronounced. As a consequence, and though recurrent education ideals have been around for about two decades, its several components "have not been welded together into an integrated system" (Levin et al., 1983). According to Blaug and Mace (1977) and Blaug (1985: 17)

> "The recurrent education movement failed to catch on because, worried about inflation, youth unemployment, and the actual or impending glut of highly educated people, most governments in the 1980s cut back on educational expenditures and hence were reluctant to venture forth to any significant extent into the uncharteered territory of recurrent education and training"

That is, major prerequisites for the creation of an integrated system of recurrent education have not been met. These concern the impact of fragmentation on the formulation of policy: the problems associated with the inappropriateness of conventional financing mechanisms (OECD, 1982b; Rehn,1983); and the dilemma of integration vis-a-vis further diversification of education. With regard to the financing of recurrent education, Levin and Schütze (1983: 25) write that the obstacle appears to be that:

"The logic of recurrent education for improving the efficiency and equity of the utilization and training of human resources is not matched by appropriate incentives to persons to forego traditional educational patterns for those of recurrent education and training"

The issue of diversification versus integration is crucial to the formulation of recurrent educational policy. The question relates to whether systems should be decentralized and loosely structured so as to adapt efficiently and flexibly to changing needs, or alternatively, whether recurrent educational systems ought to be centrally coordinated so as to be better equipped to deal with social equality concerns. Differentiation largely refers to the school curriculum in terms of academic vis-a-vis vocational subjects and is wholesale related to a conventional formal educational system. Diversification, however, implies a rejection of the conventional system in that it emphasizes the complementary rather than the corrective or compensatory roles of education. Coordination denotes the closer interrelation of all component parts which together constitute the conventional formal system of education. Accordingly, coordination involves a bringing together of non-formal and formal activities within a multifarious network. Integration refers to "unification of educational sectors into a coherent whole with a single structure, shared objectives and global planning" (IIEP, 1984: 36).

Social forces and their rationales and policy concerns for and against an unification of educational sectors into a recurrent educational system exist in a dialectical relationship. Figure 5.2 indicates this dialectic of diversification-integration in relation to the formulation of policy for recurrent education.

Figure 5.2 Dynamics of Diversification and Integration

Notwithstanding the inadequacy of current financing mechanisms and the hesitation surrounding policy actions, it would appear likely that social forces will demand a solution for recurrent education. Interest groups assume that such a system could be utilized to their own benefit. This may lead to a situation in which forces-in-opposition cooperate for their mutual good. In Sweden, it appears that interest groups are to a considerable degree united in their stress on the necessity of implementing recurrent education. Considering the scarcity of resources and the prominence of "traditional" policy concerns, it seems probable that pragmatism also dominates the recurrent educational policy debates in Sweden.

5.5 Concluding Remarks

A general purpose of the preceeding four chapters has been to outline the terms of reference and the most common conventions associated with the recurrent education thesis: to discuss its various features, issues and developmental trends in relation to distinct paradigmatic orientations and their conflicting or contradictory interpretations: to propose a theoretical frame of reference for the analysis of the dynamics of alternative motives, rationales, forms and principal audiences pertaining to recurrent education and training schemes: and finally, to present a brief outline of the contradictory nature of various approaches to recurrent education and training, as well as to outline the basis from which their strategies to policy action emanate. It has been argued that, although major components of the recurrent education proposition have been around for a few decades, they have not been welded together into an integrated system. Notwithstanding its potential, recurrent education has not succeeded in establishing itself firmly in the educational arena. It emerged, however, that the major shortcomings behind this lack of concrete action are not directly attributable to the essentials of recurrent education, but instead appear to emerge from macro-societal contraining factors such as, by way of example, the inappropriateness of financing mechanisms, the general failure to agree on the desirability, content and the direction of reform, the inability to devise a clear line for policy action and to implement already existing ones, and the prominence of social forces which, apparently, have set forth essentially divergent goals and conflicting targets for recurrent education which, in turn, culminated in the accumulation of alternative strategies for the design and implementation of recurrent education systems. Often, the rationales behind the approaches are in fundamental contradiction. The occurrence of such incompatibilities perhaps renders the recurrent education proposition unsuitable for generalization.

One conclusion reached is that the implementation of a system of recurrent education is unlikely to succeed without thorough changes in the ethos, nature and the availability of work, the existing organization of the workplace, the current schemes of distributing the economic benefits of production, as well as the present conception of leisure and work itself. Especially the latter emerges as an important factor. Notwithstanding the climate of relative quietness presently surrounding recurrent education, it would appear highly probable that comprehensive systems of recurrent education will eventually emerge in the decades to come. The major rationale behind this projection is that the principal social forces-in-opposition both, though in different ways and to a different extent, might benefit from a recurrent educational system. In view of the existing lack of consensus as to the properties and general features of such a system, and taken the complexity of issues still surrounding the debate on the desirability and applicability of recurrent education into account, it may be expected that, perhaps with the exception of a few nation-states, institutional recurrent education may not become a reality until certain preconditions which presently obstruct its implementation are satisfied.

PART TWO

RECURRENT EDUCATION AND TRAINING:

TWENTY-FIVE YEARS OF SWEDISH DEVELOPMENTS

Chapter 6:

25-YEARS OF SOCIOECONOMIC CHANGE IN SWEDEN

6:1 Introduction

In keeping with the theoretical framework of this study, the present chapter will address major socio-demographic, economic and political developmental trends that have a bearing on the process whereby recurrent education and training policies were introduced in Sweden. It is suggested that educational reform work should be seen within the context of a broader framework of reference which constitutes an interplay of economic, political and sociocultural factors. Although it is inappropriate to delineate sharp boundaries between political, economic, and sociocultural dimensions, it is attempted to isolate single-dimensional trends peculiar to Sweden from about 1960 to 1985.

6:2 Polity

Key-characteristics of the Swedish polity are the strengths of the social democrats, labor unions, and popular organizations. With the exceptions of the World War-II period and the years between 1976 and 1982, a left-of-center coalition has been in office ever since 1932. Sweden of the 1950s and 1960s has been described as a "consensual democracy" characterized by a homogeneous political culture and a shared egalitarian philosophy (Elder et al., 1981). A strong commitment to redistribution of resources, which is perhaps one of the most striking features of the Swedish Model, resulted in the creation of typical measures meant to positively affect equity relations in society.

These policies have influenced wages, the position of women on the labor market, length of vacations and the working day, and rules governing leave from work. Sweden, which represents an interventionist model of welfare based on equality principles, has been capable of directing economic surplus in a framework composed of multiple policy domains. In the aftermath of the Great Depression, the working class pressed for the reform of poor relief legislation. After an elementary universal system of social security in terms of, for instance, health care and housing had been initiated, the demand shifted to the earnings related benefit schemes such as pensions, unemployment compensation, and child allowances (Korpi, 1983; Olsson, 1985). The Swedish welfare society, which notwithstanding its commitment to economic democracy has largely left the means of production in private hands, can be seen as a contemporary outcome of the institutionalized struggle arising from contradictions between liberal social democracy and a capitalist mode of production.

6.3 Demography

Important demographic trends in Sweden during the past couple of decades are, for instance, a declining fertility rate and a climbing life expectancy which, by the mid-1980s, was 73 years for men and 79 for women. After a "baby-boom" in the 1950s and early 1960s, the birth rate fell from 123,000 in 1965 to a low of 93,000 in 1982 (SCB, 1985a). In the 1970s, when immigration exceeded emigration, the population increased roughly by 0.25 percent as against an annual growth of 0.8 percent during the 1960s. A further slow-down of population growth until the year 2000 is suggested by current parameters (Mosk, 1983). By 1985, about 83 percent of the population lives in urban communities.

The consequences of these demographic changes, which are quite similar to those experienced by other advanced welfare states, are to be seen in the context of economic and public policy. A demographic change has implications for the planning of education. For example, as is indicated by Table 6.1, enrolment in compulsory schools is projected to decline in the near future.

Table 6.1 Projected Enrolment in Compulsory Schooling

Academic Year	Projected Enrolment in Compulsory Schooling
1984/85	951,600
1990/91	853,100
1994/95	834,600
2000/01	850,500

Source: adapted from SÖ 1984a, pp. 44.

One rationale for recurrent education is to rescue educational institutions (Levin et al., 1983). In the context of Table 6.1 this motive gains in significance. Decreasing enrolment in the compulsory school could mean, among other things, that schools with an enrolment below a certain base-line will have to merge with others; that accomodation at the compulsory level will be underutilized; that other priority targets for the allocation of resources to education will emerge; or that a larger number of teachers will look for employment elsewhere. Indeed, birth trends and increasing longivity, and a general prolongation of leisure-time or periods of non-productive activity, imply that a change in the relations between education, work and leisure increasingly becomes unavoidable. By way of example; in 1975, ten percent of the age cohort between 30 and 35 years old was engaged in full or part-time formal educational activities as provided by institutions of higher education, municipal adult education or labor market training (SOU, 1977b: 38). Excluded from this estimate are education and training provided by the labor movement, the study circles arranged by the educational associations, and all types of company-based or state operated personnel training.

6.4 Economy

A "Swedish Model", to which Lindbeck (1975) refers as a "laboratory for economic and social experiments", emerged gradually since the 1930s, especially in economic policy debates. It was originally a strategy for the stabilization of employment and inflation, based on so-called "Keynesian" policies, drawn up in the late 1930s by adherents of the "Stockholm School", such as Gunnar Myrdal. A central feature of the model was to expand the scope of state intervention in times of economic hardships through an increase in the levels of taxation-financed public sector spending and to reverse this situation once the economy improved. Marketing and manufacturing advantages, reinforced by a scheme of disciplined interest bargaining between unions and employer organizations, secured a stable rate of economic development. During the 1950s, annual gross domestic product (GDP) growth averaged 3.5 percent. During the 1960s, GDP rose to an annual average of 4.6 percent (OECD, 1970; OECD, 1984).

After having experienced a period of steady economic advance, in the 1970s, Sweden encountered structural economic problems in terms of rises in the cost of energy supply, slumping world trade, high labor costs, declining industrial outputs, rising inflationary pressures, and budgetary deficits (SOU, 1982: 14; and Eklund, 1984). As the result of these and other hardships, economic growth slowed down. Whereas GDP averaged 2.7 percent from 1970 to 1975, it reached 1.3 percent over the second half of the 1970s. Between 1980 and 1984, Swedish annual GDP growth averaged only about 0.8 percent (OECD 1984).

Employment in the service sector has risen from about 800,000 in 1960 to over 1.6 million persons by the 1980s. Relative to this development, agricultural and industrial economic sectors further declined in terms of employment capacity (SCB, 1985a). Economists argue that the "mixed model" has ceased to function properly. Strategies proposed for achieving sustained economic recovery range from a return to a traditional market economic model to readjusting the current model. This controversy also concerns measures for attaining industrial democracy by means of labor managed economic alternatives (Meidner, 1981; Dahmén, 1982; Ahrecht et al., 1983; Ministry of Finance, 1981).

The effects of economic fluctuations on educational policy are considerable. By way of example, the fact that Sweden's export package has changed from raw materials and semi-finished goods to advanced products with a high technology component has been instrumental to an initial formulation of the "rolling reform" strategy (OECD, 1962). Central to this idea was the objective of providing the expanding economy with appropriately skilled technical manpower. Although a "group of experts" (OECD, 1969) stresses the importance of manpower objectives, factors other than economic have been instrumental to the spectacular growth in the allocation of resources to education. In 1960 constant prices, the real share of public expenditures on education has increased from 4.6 percent in 1960, via 5.7 percent in 1975, to 6.6 percent in 1981 (OECD, 1985: 72). In 1981, educational expenditure accounted for one-fifth of the public budget.

6.5 Labor Market

The initial transformation from an agricultural into an industrial society has in turn been surpassed by the transition to the "service society", characterized by a large public sector. The stress put on technological innovation changed production processes in industry, commerce, and the public sector. These changes penetrated the development of the educational system and affected the formulation of recurrent educational policy.

A strategy for active labor market policy and wage solidarity gradually emerged in the post-war period. Labor market policy derived its inspiration largely from the "Rehn-model" of the 1950s, which advocated an alternative road to full employment (Rehn and Lundberg, 1963; Ginsburg, 1983). From 1965 to 1985, registered unemployment fluctuated between 1 and 3 percent of the labor force which, by 1985, comprised 4.4 million workers; an increase with 11 percent since 1970. (Björklund, 1981; AMS, 1985). By 1985, private enterprise employs 63 percent of the labor force, the public sector 37. Comparable figures for 1965 are 79 respectively 21 percent (SCB, 1985a). In Table 6.2 some developmental trends affecting the labor market are indicated from 1960 to 1984. It can be observed from this Table that the employment and unemployment sectors have grown simultaneously. It is striking to note that the women augmented their share in total employment to the extent that they constituted about 47 percent of the labor force by 1984. It should however be noted that women are to a higher degree than men part-time employed.

Table 6.2 Labor Market Trends, 1960-1984 (in 1000's)

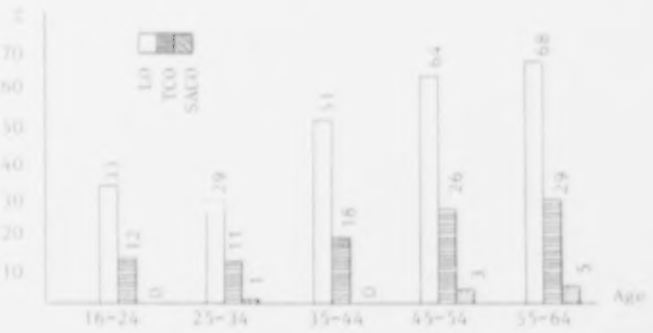
YEAR	TOTAL	MEN	WOMEN	TOTAL EMPLOYED	UNEMPLOYED
1960	3,129	2,275	854	3,285	56
1965	3,388	2,290	1,098	3,432	44
1970	3,356	2,206	1,170	3,436	80
1975	3,429	2,173	1,256	4,061	67
1980	3,318	2,375	1,943	4,232	86
1984	3,394	2,261	1,993	4,254	148,5

Source: adapted from SCB (1985a) and the OECD (1986: 62)

During the 1970s, the principles of centralized and collective bargaining between employer and employee organizations became dysfunctional and gave way to polarization and the subsequent formalization of labor relations. As a result, new legislation was created: Security of Employment Act (1974); Paid Educational Leave (1975); Co-determination Act (1977); Act on the Work Environment (1978); Equality Act (1980); Wage Earner Funds Act (1984); and the Act on Renewal Investment Funds (1986). These changes seriously affected decision-making structures and the quality of working life. They have created the preconditions for designing workplace reforms involving recurrent education.

The largest and most influential labor union in Sweden is the Central Trade Union Confederation (LO). Other major unions are TCO, comprised of skilled industrial and public employees, and SACO which mainly consists of academic professionals. Participation is exceptionally high: almost 85 percent of all workers belong to one or another union (Forseback, 1980). As indicated by Figure 6.1, the educational background of union members in terms of their average level of formal educational attainment differs considerably between the three labor unions mentioned. The differences tend to become more pronounced over the years due to unequal participation in recurrent adult education (LO, 1982; TCO, 1983). Figure 6.1 presents an approximation of the extent to which the average acquired level of formal schooling of members of the major unions differ. Statistics exclusively refer to the proportion of union members (in percent of total membership) with mandatory schooling only.

Figure 6.1 Unions and Educational Attainments, 1981. Proportion (in percent) with compulsory schooling only.



Source: LO 1982: 115 Figure 42

In the wake of the labor movement's departure from principles of collective bargaining in 1976, and due to its criticisms of the "historical compromise" or mixed policy model, LO actively entered into the struggle for power in Swedish society (Korpi, 1983: 210). In the area of public policy, a consequence of the radicalization of the labor movements was the augmentation of active intervention in the formulation of educational policy. Given that the reform of mandatory and higher education was to a large extent completed by the mid-1970s, the unions demanded reforms which would affect the relations of the workplace and adult education structures (Rubenson, 1983: 238). Especially LO intervened with the objective of expanding recruitment of underpriviliged groups to recurrent adult education in order to reduce excess educational inequality. The labor movement's concern with policy for recurrent adult education may be seen in terms of its desire to underwrite attainment of equality of outcomes rather than equality of educational opportunity.

Chapter 7.

THE ROLLING REFORMS I: SWEDISH EDUCATION

7.1 Introduction

This chapter briefly describes the meso-context of the process by which adult education became gradually institutionalized in the period from 1960 to 1985. Due attention is paid to the so-called "rolling reforms" in Swedish education. In section two, the comprehensivization of mandatory schooling and vocationalization of higher education are discussed in so far these are relevant to recurrent education. The third section attempts to describe some phases in the design of a strategy for recurrent education. A fourth section presents rationales for recurrent education with particular reference to the Swedish educational system. Section five outlines official policy goals associated with recurrent education in Sweden. The final section presents some alternative indexes for recurrent education and training.

7.2 Swedish educational reforms

Some unusual aspects of Swedish educational reform efforts in the post-1950 period relate to the timing and pace with which they advanced from a planning to an implementation stage, and to the continuity of the reform efforts (Heidenheimer, 1978). In this connection, the prominent and dynamic roles of policy-oriented research in relation to educational innovation were crucial (Paulston, 1968; Husen and Boalt, 1968). Nevertheless, a OECD group of experts wrote that "policy research seemed to constitute more of a potential force for change than the major contributor to past reform and current planning" (OECD, 1969).

Forces fuelled with a widely shared egalitarian philosophy and strong social democratic political values appear to have been able to influence the scope, direction, and nature of various reforms more effectively than research findings. Expectations were that the sweeping changes in structure, content, methods, and access to education would be replaced by the transition to continuous "rolling reforms" through constant self-correction. The various forms of adult education in Sweden have evolved as a result of successive public policy reforms during the 1960s and 1970s. Of particular relevance to the design of recurrent education policy is the mandatory school reform of the 1960s. The development from the differentiated and selective schools into a comprehensive compulsory school system generated a flow of policy repercussions which gave way to a subsequent reform of upper-secondary schools and adult education structures.

The formulation of recurrent education as presenting a guiding principle for educational development was heavily influenced by the dynamic of earlier reforms. The impact of the "internal reform dynamic" on recurrent education policy formulation has been as significant as that of an external dynamic in relation to the efforts to consolidate the welfare society. The idea of "going comprehensive", which dates back to the 1880s, entered into the policy debates in the late 1940s and was subjected to extensive pilot programs in the 1950s (Husén, 1986). Mandatory school reforms were to postpone differentiation into academic and vocational streams, to increase accessibility of education in a given catchment area with a guarantee of individual free choice, and to improve quality of schooling (Marklund, 1985a). A major goal of the mandatory school reform was to promote the equalization of educational opportunity (Husén, 1975). After a relatively short period of experimentation, the comprehensive system was implemented all over Sweden from 1962 and onwards. Another motive of significance to the reform work concerns the resolve to emphasize the connections between education and the world of work. Efforts were launched to stress the vocational relevance of mandatory schooling by including subjects with a strong vocational orientation into the curricula. In 1969 and 1980, legislation reinforced this resolve by introducing work experience programs in the upper reaches of mandatory schools.

Comprehensive schooling qualifies students to enter the upper-secondary school regardless of subject electives. Traditional regulations governing the transfer of students from compulsory to upper-secondary schools were subsequently abolished. Upper-secondary schools had to cater for a larger student body with divergent backgrounds, interests and aspirations. An important "rule of thumb" for all post-compulsory education was to give an equal status to academic, general, and technical-vocational educational streams (Marklund, 1985b). These developments were to have implications for tertiary education. Vocationalization implied a merge between the traditional universities and other institutions of higher learning. Also, policies for admission to university education were drastically altered.

The higher education reform of 1975 has been a major decision in Sweden with quite deliberate social aims and with a strong accent on recurrent education. The 1975 reform, which largely addressed the organizational structure of higher education in its totality, intended to even out inequality and disparities in Swedish society (Dahllöf, 1979). The major difference with earlier educational reforms was an apparent shift from policy limited to reducing basic inequality of opportunity to policy designed to affect the distribution of resources by education. Given the significance attached to educational attainments in relation to the screening of prospective workers engaged in a ferocious competition for jobs and assigning them for life to work roles, the implementation of policies meant to reduce the effects of home background on social stratification in universities became one major policy issue in the 1970s. Other goals of this reform were to match higher education with imperatives created by reforms at lower levels, and to structurally adjust the system in response to p. conditions required for designing and implementing a system of recurrent education and training.

Major thrusts of the proposals generated by the U68 Commission on the reform of higher education were to dismantle remaining distinctions between academic and "practical" types of higher education, and to further tighten the nexus between occupation and courses of study (Heidenheimer, 1978). The 1975-77 reform, which largely followed the lines of action spelled out by the U68 Commission (SOU, 1973) stressed "working life connection" rather than "vocational orientation" (Abrahamsson, 1982).

Resolves to reduce intergenerational inequality of educational attainment have been especially important to the design of the higher education reform (OECD, 1981a). Also important was that the number of newly enrolled entrants in higher education fell from about 25,000 in 1970 to roughly 15,000 in 1975. Parallel to this decline in full-time students, the number of part-time students in tertiary education rose dramatically over the same period (Heidenheimer, 1978). A structural change introduced by the U68 Commission was to distinguish between general lines of study and more isolated programs or single courses. Connection to working life applied equally well to both lines of study.

A major reform decision relating to the selection of students for higher education was taken in the early 1970s and endorsed in 1977. New admission rules generally entail that every adult permanently residing in Sweden is formally entitled to pursue university studies. Widened admission to Swedish universities essentially was an extension or legitimation of earlier policy commitments. Its basic aim was to promote social equality by a widening of access to higher education, and to democratize and decentralize decision-making procedures (Kim, 1982). The 25-4 rule stipulates that eligibility for tertiary education may be based on either completed upper-secondary school or on having reached twenty-five years of age in combination with at least four years of working life experiences. Formalization of adult education and its partial integration with conventional modes of educational delivery was greatly facilitated by the higher education reforms of the 1970s.

Efforts to improve the linkages between the educational system and the world of work, in addition to the resolve to increase codetermination and to decentralize in favor of locally operated organization, made it necessary to devise a strategy which could promote the broad cooperation and comprehensivization of alternative educational routes (OECD, 1980). Though in drafted version, the principles of recurrent education appeared in the Swedish policy debate in the mid-1960s (Olofsson and Rubenson, 1985;). The proposition resurfaced with the recommendations for reforms spelled out by the U68 Commission. This Commission presented recurrent education as an ultimate guiding principle and policy instrument for the planning of education in Sweden.

The fact that interest groups such as TCO and LO stressed the importance of extending the democratization of education also to the non-formal adult education sector, meant that recurrent education as representing a viable alternative to conventional front-end education received much publicity both in Sweden and abroad during the 1970s (Rubenson, 1979a).

Marklund (1985a) emphasizes the importance of interpreting the the reform work in Swedish education in terms of the promotion of social equality. Often a distinction is made between inter- and intra-generational equality of educational opportunity and attainment. Intra-generational inequality refers to attainment or opportunity differentials between persons belonging to one generation. Intergenerational inequality refers to differences in educational attainment across generations. That is, it pertains to the level of schooling of the son relative to that of his father and mother. Reduction of excess intra-generational differences in attainment received priority, especially during the 1950s and 1960s. In the 1970s, attention shifted from the intra to the intergenerational aspects of excess inequality of attainment. Priority was given to the design of policies with a potential for reducing inequality of educational attainment across generations. The emphasis on results rather than opportunity led to the identification of targets for policy action. Underprivileged groups in society were difficult to reach with conventional educational tactics. Hence adult educat sought for and experimented with alternative strategies for utreach. Figure 7.1 indicates how age-specific and average differences in formal educational attainment have been subject to changes over time. The Figure suggests that, although democratization of youth education may have reduced intra-generational inequality of attainment, this reduction partly has been outflanked by an increase of inequality of attainment across generations.

Figure 7.1 Age and Educational Outcome Differentials

Source: Jonsson 1984: 189, Figure 9:1

The planning of a reform which could increase social, economic and political participation of resource-poor groups in society by means of extension education implied that alternatives for formal education were to be set up. Adult educational schemes form a significant component of recurrent education. Although subsequent paragraphs mainly deal with adult education, they should be seen in the context of recurrent education al large.

7.3 Phases of Recurrent Educational Development

One of the most common ways for adults to receive some further education during the 1930s was by means of distance studies or by attending specially created compensatory evening classes at gymnasium level (Arvidson, 1985). Before 1945, adult education had been promoted by various popular movements. These provided non-competence giving adult education by means of "lectures to the peope", library meetings, study circles and correspondence activities (Marklund, 1983: 219). Other features of the period were expanding folk high schools and residential colleges for adults. A state-initiated effort to create facilities for the provision of upper-secondary education for adults resulted in the establishment of evening classes in 1938 (Höghielm, 1985: 45). The formalization of adult education commenced, in a way, in 1947, when the state assumed for the first time financial responsibility for adult education on a fifty-fifty basis. As a result of the prominence given to the expansion of education for adults, some government Commissions on adult education and vocational training were appointed. Among the recommendations published by the 1947 Commission on the future of educational development in Sweden (SOU, 1948) were guidelines for policies regarding adult education. During the 1950s, new programs for adult education were initiated and those which already existed were upgraded and expanded. By 1958 various general, technical and commercial subjects could be taken at the upper-secondary school level by adults in many parts of Sweden (SOU, 1962a).

The most important reason for the expansion of adult recurrent education and training programs during the latter half of the 1960s was the belief in the positive contribution such schemes would make to augmenting economic growth in Sweden (DS U 1985: 10). The commence of the "modern period" in adult education is pin pointed in the late 1950s or early 1960s (Höghielm, 1985: 14). Broström and Ekeroth (1977: 15) implicitly sub-divide the period of innovation in adult education into three relatively distinct phases: (1) 1959-67, (2) 1968-75, and (3) from 1976 onward. Recently, an important decision-in-principle has been generated by the major powers on the labor market with regard to the initiation of so-called "Renewal Funds". Therefore, the third phase in the development of Swedish adult education has, perhaps, been concluded by 1985.

Thus, the period between 1960 and 1985 is, for conceptual purposes, sub-divided into three phases. Each of these periods is characterized by a subsequent increase in the extent to which the state assumes overall responsibility for the provision of adult education and training. Among these responsibilities are the implementation of appropriate financing mechanisms and the formulation of required legislation stipulating, for instance, the rules for leave-of-absence for educational purposes during working life. Long-term trends of adult education development cut across the three stages mentioned previously. The Bill of 1967 (Proposition 1967: 85) marked the start of a major period of recurrent adult education development (Rubenson, 1980). The third period commenced with the two Bills of 1975 (Proposition 1975: 9; Proposition 1975: 21). These endorsed and extended a

policy of redistributing resources by means of recurrent adult education (Broström et al., 1977; Marklund, 1980). Abrahamsson (1985: 3) writes that "recurrent education and training became an important motive behind the general reform works in Swedish education". A new phase of adult education development perhaps began with the operationalization of "Renewal Funds" in 1986. Adult education is likely to be seriously affected by the projected formation of capital exceeding 7 billion kronor: partly to be used for financing of personnel training (Tryman, 1986).

The rationales of recurrent education and training, in Sweden as well as elsewhere, are tightly interwoven with the demands and conditions of the workplace. In the early 1960s, Rehn and Lundberg (1963), while writing about the close interdependency of public and labor market policy, raised issues of importance to the Swedish educational policy debate. It was suggested to rearrange the distribution of education, work and leisure over the human life-span. The U68 Commission discussed alternative models for the systematic planning of recurrent education and training. In one form or another, these models have reappeared in the literature concerning recurrent education and training (e.g. Stoikov, 1975; Rubenson, 1979a: 2; Rubenson, 1979b: 16). In anticipation of the higher education reforms, which were to take place in 1975, the recurrent education debate of the late 1960s and early 1970s was essentially limited to a discussion of the ways in which higher education and working life could be optimally distributed. The concept of recurrent education, as initially conceived in Sweden and later adopted by various member states of the OECD, refers to a principle for the organization of education, work and leisure in an alternating way across the human life-span. As such the concept refers to both the conventional educational system and to forms of adult education, including non-formal company-based personnel training.

7.4 Motives for Recurrent Education in Sweden

In a general way, the various motives for recurrent education are discussed in chapter 5. Apart from "traditional" and "new central" goals, the Swedish policy debate has focussed on one peripheral aim in particular. This relates to the integration of educational structures. In Sweden, modes of adult education have become a more or less formalized component of the regular educational system. Therefore, rather than concentrating on a restructuring of component-parts, the emphasis has been put on themes relating to the content, curriculum, and definitions of knowledge in a system of post-compulsory education. An Expert Committee assessed the outcomes of these developments in 1984 (Ds U 1985: 10). Its report mentions issues of importance to the pace and direction of recurrent education reform work: the repercussions of earlier reforms; the findings of a low-income inquiry; the swiftness of technological change; and a widening of the scope of personal demand for education. (1) a by-effect of the mandatory school reform was a widening of inequality of educational attainment across generations. Also, the mandatory

comprehensive school was designed to cater for individual preference of choice. This meant that there should be opportunity to change a once chosen educational route later in adult life. (2) Adult education reform was partially a response to results generated by the government inquiry into the situation of the low-income households (Johansson, 1970; Rubenson, 1983: 237). (3) Fast technological development necessitated the design of new approaches to adult education. The idea of a "reserve pool of talent", which refers to the idea that underutilized labor may become productive if appropriately trained, contributed to the design of recurrent education policies. (4) Other considerations relate to the perceptions of individuals at the micro level of analysis. These personal motives are associated with freedom, creativity, and self-fulfillment. Further elements of personal motives are related to better career prospects, but also to increases in knowledge or skills as ends in themselves without prior thought of economic advantage (LO, 1971).

One function of the state with regard to adult education is to coordinate or integrate facilities so as to make effective use of resources allocated. The function of alternative adult education programs ought to be seen as being complementary rather than competitive with regard to an ensuing "battle for clients and favors". Implementing adult education programs within the framework provided by recurrent education is destined to fail in case its basic operationalization occurs in isolation from educational realities in terms of the diversification of needs and demands and corresponding alternative modes of delivery. A crucial educational policy concern in Sweden is, therefore, to assign top priority to the integration of existing educational programs and the coordination of various financing mechanisms. Recurrent education implies a strong emphasis on coordination with other public policy domains rather than concentrating on educational sectors alone. Even though, Bengtsson (1985: 4226) writes that there exist "certain gaps between verbal adherence to the overall concept and the policy choices actually taken".

The goals for Swedish adult education are mentioned in several documents. The National Board of Education (SO) contends that "together the various branches of adult education are expected within their several influence spheres to cooperate in pursuit of the general objectives of adult education as defined by the Parliament in 1975" (SO, 1983a: 9). These "general objectives" are interpreted in terms of distributive justice (SO, 1984b). General aims of adult education are: (1) Adult education must reduce the educational gaps in society (SO, 1984b). (2) Adult education must provide possibilities for a continued existence and the further development of the democratic social order. It must augment the cultural and social consciousness of citizens and create understanding of changes, and active cooperation to changes, in society (Bergsten, 1977: 140). (3) Adult education must contribute effectively to continued economic development. To this end adult education is to help supply the labor market with a properly trained and well-educated labor force, and to contribute to realizing full employment (SO, 1984b). (4) Adult education must cater for the individual preferences of adults. Wider opportunity for supplementary studies is to confer more liberty of choices at earlier stages of schooling (SO, 1984b).

7.5 Recurrent Education: Types of Delivery Systems

Notwithstanding the "elasticity" of recurrent education, there appear to be two principal classificatory approaches. Stoikov (1975) groups these into (1) an institutionalized postponement of some component of conventional education; and (2) education flexibly spread out over the life-span. Alternative categories may also be based on the extent to which a given nation-state assumes responsibility for provision, or on the considerations behind policy formulation (Rivera, 1983). Adult education is a domain where, directly or indirectly, the central bureaucracy can play important roles. In France, for example, the Act of 1966 defined the scope of adult education programs (Chenevier, 1971: 26). This Act distinguishes between (1) Conversion type: general labor market training; (2) Adaptation type: in-service training; (3) Preventive type: anticipatory and compensatory education and training; (4) Credential type: career upgrading; (5) Preparation type: special training for school-leavers; and finally, (6) Refresher type: general updating of knowledge and skills for career or leisure related purposes (Gretler, 1972).

Eliasson and Hoglund (1971: 8-10) have, on grounds of "basic properties" of adult education activities, identified a total of four alternative criteria useful for constructing an index of adult education programs. These are: (1) institutional and organizational context of modes of delivery; (2) the audiences involved; (3) the specified educational goals or objectives of programs; and (4) the methods used for goal-attainment. Rubenson (1975) emphasizes the necessity of distinguishing between various types of adult education. Rubenson (1975) and Bergsten (1977: 44-45) use a similar index of adult education programs. It comprises: (1) education for the present job; (2) education for a future job; and (3) general or non-competence education. Olofsson (1980: 32) distinguishes between education meant to qualify a person for vocational activity and education pursued for other reasons. Hoghielm (1985) makes a distinction between credential and non-credential adult education. The categories mentioned are: (1) career related adult education, (2) leisure related adult education; and (3) credential adult education.

Forms of adult education which are usually referred to collectively as recurrent adult education fall into a category which includes types of education which normally do not articulate with formal schooling, and which commences for the majority of participants after a shorter or longer period of gainful work. Recurrent adult education programs in Sweden are organized at several levels. These are: (1) education for adults organized by the state at the national level; (2) state adult education organized locally; (3) adult education privately organized by employee or employer associations; and (4) education privately conducted by one or another non-profit organization.

Subsequent paragraphs describe patterns of recruitment to and participation in various schemes of recurrent adult education. Although the reform of policy regulating admission to tertiary education destines it to become more important in the lives of many adults, regular higher education will not be covered.

7.6 Recurrent Education: Recruitment Patterns

It is fairly difficult to obtain reliable statistics about the overall structure of recruitment to adult education during the 1960s. Only a few large-scale surveys regarding recruitment to adult education were conducted during these years. In a report about the state of adult education in the 1960s, LO (LO, 1969) contends that participation partly depends on age and income. The findings of this survey indicate the magnitude of the link between home background variables and participation in further education. Table 7.1 presents data about the proportion of LO members (in percent of birth cohorts) which took part in adult education programs in 1965. The Table suggest that recruitment indeed tends to decrease as a function of age. Table 7.2 shows the proportion (in percent) of participants in adult education relative to the proportion in their respective earnings group which did not take part. It can be seen that recruitment tends to increase as a function of average monthly earnings.

7.1 Proportional Recruitment to Adult Education in percent of the LO age cohorts in 1965

Age Cohorts	Percent Attending
Up to 20	25 percent
21 - 25	16 percent
26 - 30	10 percent
31 - 35	12 percent
36 - 40	13 percent
41 - 45	25 percent
46 - 50	12 percent
51 - 55	12 percent
56 - 60	11 percent
61 - 65	1 percent

Source: LO (1969: 100)

7.2 Proportional Recruitment to Adult Education in percent of LO earnings groups in 1965

Earnings Category*	Percent Attending
Up to 900 kronor	13 percent
901 - 1,200	16 percent
1,201 - 1,500	22 percent
1,501 - 1,800	25 percent
1,801 - 2,200	24 percent
2,201 - 2,600	30 percent
2,601 and over	30 percent

*) Average Monthly Income

Source: LO (1969: 100)

In 1974, according to the findings of a SCB survey, 29 percent of the population between 16 and 74 participated in some kind of educational activity. The number of participants was found to decrease with advancing age and to increase with regard to prior educational attainment. 15 percent of persons with less than nine years of elementary schooling attended, as against 47 percent of those with post-secondary education. Women had a higher participation rate than men, 30 respectively 28 percent (SO, 1977). Table 7.3 shows the extent to which participation in education has risen from about 1968 to 1981. The proportion (in percent) of birth cohorts reported to have been engaged in education in the week before the interviews of 1968, 1974 and 1981 took place are indicated (Jonsson, 1984: 201). Table 7.4 gives an overview of the gradually increasing enrolment in all adult educational sectors. It can be seen from the Table that, relative to men, the women are overrepresented in Komvux, folk high schools, study circles and regular higher education, and underrepresented with regard to enrolment in job related adult education organized by labor unions and employer associations.

In summary, Olofsson and Rubenson (1985: 69) contend that the group which obtained nine or less years of schooling (about 43 percent of the total population) increased its participation-population ratio more than any other group did from 1975-1982.

Table 7.3 Proportion of Birth Cohorts reportedly engaged in Education Programs in 1968, 1974 and 1981.

Age	1968	1974	1981
15 - 19	54,3	59,5	74,9
20 - 24	14,8	20,0	20,0
25 - 29	7,5	7,7	8,1
30 - 39	3,9	4,7	6,2
40 - 49	1,8	1,1	3,9
50 - 59	0,6	0,9	1,1
60 - 75	0,3	0,2	0,3
Total	8,4	8,6	10,5
Of which full-time studies/training	5,7	7,9	9,8

Source: Jonason 1984: 202.

Table 7.4 Overall Recruitment to Adult Education (in percent of adults age 18-74) in 1974, 1976, 1979 and 1982.

Programme type	Sex	1975	1976	1979	82/83
All programmes	M	23,6	23,5	23,2	29,2
	W	29,1	34,2	37,5	46,1
Study circles	M	7,7	10,4	10,6	11,8
	W	11,0	15,5	20,1	20,1
Trade unions	M	1,8	2,1	2,3	2,7
	W	0,2	0,7	0,3	0,8
Labor market training	M	1,1	1,0	1,0	1,0
	W	0,9	1,0	1,0	0,9
Folk high schools	M	0,3	0,4	0,3	0,3
	W	0,3	0,3	0,3	0,3
Municipal adult education	M	1,8	2,1	1,6	1,8
	W	1,8	2,1	1,8	2,1
Universities and other higher education	M	1,8	2,1	2,3	3,2
	W	1,2	1,3	2,1	4,1
Employer Training	M	7,8	10,1	11,1	16,5
	W	4,5	5,6	7,9	11,4

Source: Ds U 1985: 10, Appendix 2.

Chapter 9:

RECURRENT EDUCATION PROGRAMS IN SWEDEN

9.1 Introduction

Adult education in Sweden is characterized by a large number of participants, facilities and forms, by a variety of agents and sponsors, by a width of subjects, and also by a multitude of didactical and methodological approaches (SO, 1977: 1). The purpose of this chapter is to describe the historical settings and outcomes of common recurrent educational programs, respectively their processes and outcomes, from about 1960 to 1985.

The following areas of recurrent adult education and training will be briefly touched upon: (1) the "voluntary" educational associations belonging to one or another popular movement; (2) state schedes for adults and municipal adult education; (3) distance and correspondence education; (4) state administered labor market training schemes; and (5) employer organized and mainly enterprise-based adult education and training, as well as the educational activities organized by major labor unions.

Swedish adult education comprises: municipal adult education (KOMVUX) which also includes competence-giving basic education for adults (GRUNDVUX); other schemes are national schools for adults (SAVU), labor market training (AMU), and popular education. The latter comprises folk high schools (FHS), the adult educational associations including lecturing or study circles (SV), and education broadcasting (SO, 1983a). The latter forms of popular education have long enjoyed public support (Boucher 1982: 158). Other adult education schemes are state supported correspondence and distance education, and forms of work place related training. The latter comprise three types: (1) on-the-job and in-service training sponsored by employers or employer associations; (2) training arranged by the Labor Market Board (AMS); and (3) training provided by a labor union.

9.2 Voluntary Educational Associations

Voluntary educational associations are most commonly known by their study circles or by the name of the organization itself. The origins of study circles are to be found in revivalist and temperance movements who experienced the need to educate their members (SO, 1983a). Though study circles were already conducted by the temperance movement in 1902, the oldest association is the Worker's Educational Association (ABF), founded in 1912 (SCB, 1984a). A study circle is an informal group which meets

for the common pursuit of studies consisting of 15 study hours spread over at least four weeks with a maximum of two meetings per weekend. The minimum number of participants to be present at any meeting is 5 and the maximum 20 (SCB, 1984a). The aims of educational associations generally are (Ds U 1985: 10): (1) to help participants to develop and improve their ability and skills to communicate: (2) to help them to develop self-awareness, self-confidence, independency, and critical reflextion: (3) to offer participants the opportunity to acquire knowledge and skills needed for abstraction and systematic orientation: (4) to give practical schooling in democratic values by means of cooperation and mutual responsibilities, and (5) to further aesthetic human development through facilitating creativity. Table 8.1 shows ten approved educational associations and the volume of their programs in proportion to total provision (in percent) in 1959/60, 1971/72, 1975/76 and 1983/84. In 1983-84, 290,111 circles amounted to 8.2 million man hours; the average circle lasted for 28 man hours (SCB, 1984a).

Table 8.1 Ten Approved Voluntary Educational Associations by their Size of Total Provision, 1959/60 to 1983/84.

statistics about study circles commonly denote either absolute enrolment or number of circles altogether held. This information is only partly useful in that it does not give the number of different persons enrolled during a given period. In 1976, while total enrolments in exceeded 2.5 million, Boucher (1982: 154) estimates that "only" about 650,000 different individuals actually participated. Voluntary educational associations have become a part of the "official" system. Table 8.2 presents ten major subjects taught and the proportion of these subjects (in percent) with regard to total provision of education by appro-

ved associations at three points in time. It can be seen from the Table that the proportion of language teaching in 1959 (a) is about equal to its proportion in 1982/83. The proportion of literature, arts, civics and law appears to have considerably increased. The proportion of music, economics, and commercial subjects apparently declined. In proportional terms, medicine, natural science subjects, and mathematics doubled their share of total provision, whereas technical subjects have apparently declined somewhat in volume over the period from about 1958 to 1982. By comparison with other types of adult education, study circles principally provide culture or civics related types of education. The situation has changed in 1971 and in 1974, when state grants were being allocated to educational associations in order to assist them in arranging mathematics, Swedish and English courses at mandatory and upper-secondary school level.

Table 8.2 Changes over time in the provision of subjects (percent of total) by approved the educational associations from about 1958/59 to 1982/83.

	STAFF / PERCENT OF TOTAL PROVISION			
SUBJECT	1959 a)	1959 b)	1971 c)	1982/83 d)
Language [1]	9,1	22,8	21,8	18,3
Literature, Arts [2]	8,5	3,5	19,6	21,2
Civics and Law	3,1	14,4	19,1	13,5
Music	13,3	8,8	11,0	8,4
Economics, Commerce	5,6	2,1	11,8	7,1
Religion, Philosophy and Psychology	7,0	8,2	5,1	5,2
Natural Sciences, Maths and Medicine	11,1	3,6	7,1	10,0
Technical Subjects	5,3	5,1	2,2	0,6
History, Geography	10,1	5,3	7,2	7,1
Rest, General Block	7,9	3,1	5,5	3,1
Subtotal	81,1	81,9	110	96,7
Total	(0)	(0)	100	100

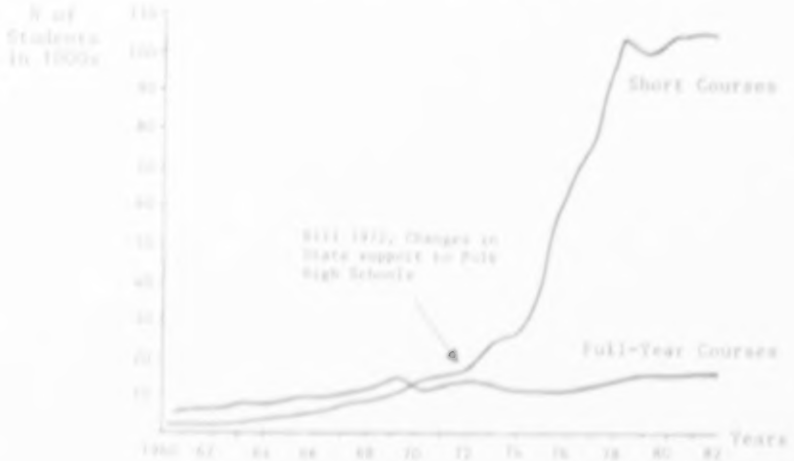
a) Including translations Only. Source: SOU 1961, Table 1.
b) Study Circles Only. Source: SOU 1961, Table 29.
c) Study Circles Only. Source: SOU 1974, Table 2.1.
d) Study Circles Only. Source: SCB 1984:2, Tables 2 and 3.
1) In 1971 and 1982, more than 10 percent of total is English.
2) In 1971 and 1982, literature is included in language group and literature category comprises arts only.

Popular education also comprises folk high school activities. The first folk high schools were founded in the late 1860s and provided education for wide segments of the population, including particular vocational courses for adults. Generally, folk high schools focus more on "civics" than job related teaching. For a long time, the schools were characterized by the absence of centrally planned curricula. By 1981, 125 folk high schools

received state support as against about 110 schools qualifying for such subsidies a decade earlier (SÖ, 1983b). The goals of Swedish folk high schools are: (1) to promote knowledge about the conditions and stipulations of the individual's immediate environment and about larger societal settings; (2) to further human ability to manifest and reveal oneself and to be able to experience and feel others; (3) to develop ability of critical discernment and active solidarity (Ds U 1985 10).

Following the major reforms of youth and higher education, it was decided to allow the folk high schools, under certain conditions, to remain an alternative educational route for adults aiming at university studies. Thus, the folk high schools may confer formal qualifications after the completion of two-year courses. The broadening of eligibility to higher studies has, in the first instance, reduced enrolments in full-time winter courses. From 1975 to 1985, however, enrolments were stable at about 15,000 students. Short-term enrolments of up to 15 weeks rose from about 16,500 in 1969 to an estimated 240,000 by 1984 (SCB, 1984b). Figure 8.1 presents an overview of the enrolment trends in short and long-term courses from about 1960 to 1982.

Figure 8.1 Enrolment in Folk High Schools 1960-82.



Source: Adapted from Boucher (1985: 156); Marklund (not published materials); and Statistical Yearbooks

8.1 State, Municipal, and Distance Adult education

The two National Schools for Adults cater for those who due to remote geographical location can not attend regular programs.

Since the mid-1970s both schools operate in close cooperation with municipal adult education programs. Residential teaching augmented from 4,000 in 1979 to 7,000 by 1984. The volume of correspondence studies levelled-off in this period (SO, 1985).

Evening high schools and specific forms of distance education were early precursors of state-subsidized municipal education which was experimentally introduced in 1963 and formally established in 1967 (SO, 1978). Municipal adult education is often referred to as aiming at conferring formal qualifications (SO, 1981a). Ever since its establishment, delivery mechanisms, and the aims, content and audiences of municipal adult education have been subject to reform. Since 1967, formal education for adults at the upper-secondary level is called KOMVUX. In 1977, legislation obliged local authorities to organize educational programs at the mandatory school level, known as GRUNDVUX.

Initially, the dilemma for Komvux was that it was required to provide credential education for all adults, but primarily so for poorly educated and otherwise disadvantaged social groups (Höghielm, 1985: 209). After 1970, when a political dimension of adult education in terms of the redistribution of resources was stressed, Komvux was expected to recruit primarily groups of people who had previously received a relatively small share of public educational resources. In 1982, a curriculum entered into force which aimed at a tightening of the connections with the world of work. Despite differences in content and methodology, Komvux awards credentials comparable to those conferred by the formal system. Komvux relates to general goals of adult education in that it provides a competence-oriented education by means of single subjects and packages of courses leading to the upper-secondary certificate. Priority goals for Komvux are to provide an educational bridge to the labor market, eligibility replenishment and complementary recurrent adult education (SO 1985 (c)). Table 9.3 indicates how the enrolment trend in Grundvux and Komvux has fluctuated from 1968 to about 1984.

Table 9.3 Enrolment in Municipal Adult Education

Academic year	Komvux	Grundvux
1968	29,000	11,000
1972	46,500	17,000
1976	51,200	21,000
1980	51,100	24,200
1981	47,400	24,500
1982	53,100	17,800
1983	48,300	18,400
1984	37,600	18,000
1985	31,800	18,300

In 1979, there were more students in Komvux taking courses at the upper-secondary level in a single subject than there were students in upper-secondary school altogether (Marklund, 1980: 47). Most Komvux students take single subjects on a part-time basis only. Women participate more in Komvux than men: 65 percent against 37 percent respectively (SCB, 1985b). The average age of participants is 31 years for women and 28 for men: 90 percent of students has been employed at least one year before taking part in Komvux: over 50 percent of Komvux participants change job after completion of the program: and most students finance their studies by simultaneous employment (SCB, 1985b).

In 1898, Hermods Correspondence Educational Institute started in the city of Malmö in southern Sweden. By 1960 Hermods alone registred about 200,000 students of which 90,000 new entrants (SOU, 1962b). A minority took part in programs which conferred formal credentials. Most correspondence courses were utilized by those who felt the need for a job related kind of technical education. Of the 14 correspondence institutes which existed in 1960, three offered education at the upper-secondary level. Until 1960, 87 percent of the graduates at the upper-secondary school level in the subjects of commerce and trade came from Hermods. In 1959, not less than about 91 percent of the adults who took part in correspondence studies were men (SOU, 1962b). The number of students taking correspondence courses rose from 10,000 in 1964 to 75,000 in 1983 (Höghielm, 1985: 206). Enrolment remained fairly constant thereafter. Since 1974, programs are frequently combined with study circles and broadcasting.

Recruitsent to university correspondence studies has increased rapidly since 1975. Due to a relaxation of intake requirements many adults participate as a component of recurrent education (Dahllof, 1979). The results of a study on aims, processes and outcomes of university correspondence education were that most students worked full-time next to the program: that 60 percent was interested in one subject only, and that about 30 percent managed to spend more than ten hours a week on studies. The 41 university distance programs existing by 1975 enrolled nearly 1,600 adults (Willén et al., 1979). A third category of adult distance education consists of broadcasting schemes. The media cooperate in various ways with other modes of adult education, in particular with municipal adult education authorities and traditional correspondence education institutions.

3.4 Education and Training in Working Life

According to the Swedish Labor Market Board, training programs may be defined as programs for which special kinds of training allowances are being granted by the Board (AMS, 1985). The so-called Korea recession of 1951 has prompted a growth in labor market training which has continued more or less uninterrupted until 1979 (SO, 1981a). Central to labor market policy is the effort to inhibite factors which might otherwise contribute to more unemployment. Active labor market policy is "the fulcrum

of Sweden's welfare policy and is considered a practical means of emphasizing egalitarian philosophy" (Ginsburg, 1983: 122). Until 1963, labor market training was reserved for unemployed, but starting in that year, admission rules were relaxed so as to cater also for people facing a risk for lay-off. Typically, active labor market policy concerns influencing the demand and supply sides of labor by means of measures such as a promotion of regional mobility, organization of relief work projects and operation of specific training programs (AMS, 1985). By 1985, labor market training is arranged jointly by the Labor Market Board (AMS) and Board of Education (SO). Studies show that, of those who took vocational courses and subsequently atempted to enter the labor market, 80 percent obtained a job within three months of course completion (AMS, 1985). The audience of labor market training comprises the unemployed, youth and other new entrants, and the handicapped. So-called "bottleneck training" forms a crucial component of labor market training organized by the Board (AMS, 1985). Table 8.4 presents information about developmental trends in the volume of training conducted from 1959 to 1983. Distinction is made between regular and in-plant labor market training. Although unemployment reached a contemporary peak in 1983, it can be seen from this Table that the volume of regular labor market training was less in 1983 than it was in, for instance, 1977 and 1979. The recent decline in the volume of training is partly caused by the introduction of new principles for joint arrangement and shared responsibility between the various government bureaucracies concerned. Since 1986, the Labor Market Board has obtained the "right to order" a state or municipal adult education center to conduct courses and training programs with a strong labor market bias.

Table 8.4 Volume of Labor Market Training

Year	Labor Market Training	In-Plant Training	Year	Labor Market Training	In-Plant Training
1959/60	*	14,134	1975	27,500	7,800
1961/63	*	17,564	1977	43,500	5,200
1965/66	*	35,931	1979	50,500	2,200
1969	11,000	5,000	1981	32,300	1,300
1971	15,600	5,800	1983	38,000	1,300
1973	15,600	10,500	1985	42,000	...

* No detailed figures available

Sources: TCO (1973) and AMS (1985)

Apart from labor market training of the type described above, other modes of recurrent education and training delivery also relate to working life. Generally these concern union operated education or company-based training in relation to production. The distinction is often made between (1) internal or external company oriented training; (2) education provided by the labor movement; and (3) education or training administered by public authorities at national, regional and local levels.

Just as the unions' concern with equality led them to champion policy assuring the right to work they later claimed the right of adults to recurrent education. Unions profoundly influenced the design of legislation governing the financing of recurrent education. Provision of recurrent education is instrumental to the successful implementation of proposals put forward by the labor movement with regard to labor market policy, and to aims associated with promoting "economic and industrial democracy" (LO, 1971: 194). The goal behind union-initiated education or training generally is to provide members with knowledge about the movement and wider aspects of labor relations. These refer to skills required for active participation in joint decision making and in discussions about the "quality of working life".

Table 8.5 offers an approximation of the changes affecting the volume of programs arranged by the entire labor movement. The information appearing in the Table is broken down by age. The data refers to the proportion (in percent) of all relevant age cohorts which have taken part in educational programs arranged by the labor movement from 1974 to about 1982. It emerges that the proportions of the relevant age groups which did not take part in any kind of labor union education or training activity decreased over the period in question. If regarded in absolute terms, however, not more than between about 0.5 and 7 percent of these age groups actually participated in 1981-82.

Table 8.5 Participation in Labor Union Education

Age	1974	1975	1976	1977	1978	1979	1980/81	1981/82
18-19	0,0	0,9	0,9	0,5	1,8	2,5	1,4	2,2
20-21	1,4	2,4	1,9	3,3	5,8	3,2	2,5	3,2
22-24	1,2	1,6	2,7	3,3	4,4	4,1	5,2	4,5
25-29	1,8	2,5	3,2	4,4	4,0	6,2	4,9	5,7
30-34	1,5	2,2	2,6	4,0	5,5	5,8	3,7	6,1
35-39	1,9	2,4	3,6	4,5	4,9	4,2	4,2	6,9
40-44	1,0	1,0	2,6	3,7	4,8	4,7	4,7	5,1
45-64	0,9	1,3	2,3	3,4	3,0	3,1	3,0	4,2
65-74	0,3	0,1	0,1	0,0	0,3	0,1	0,3	0,4

Source: Ds U 1985: 10 Table 3:3

Personnel training, which expanded tremendously in the 1970s, constitutes an area of concern for recurrent education policy makers. Forsberg et al. (1984: 10) write that adult education commonly referred to as personnel training comprise different forms depending on whether programs are operated by a company, an external firm or in cooperation with regular modes of adult education. Company-based or delegated types of personnel training aim at extending or consolidating skills, knowledge, and attitudes necessary for developing company activities while at the same time catering for the needs of personnel. Recruitment

occurs generally on a voluntary basis. Micro-level motives for participation are therefore frequently related to a desire to advance career prospects by means of enhanced competitiveness. Additional motives, though probably less pronounced, relate to a wish to improve ability to deal with out-of-work situations. Most training bears witness to a firm's spheres of operation.

Table 8.6 indicates the extent to which various categories of personnel took part in either the internally or the externally organized company training activities from 1974 to about 1983. The information pertains to the proportion (in percent) of the relevant socioeconomic groups of salaried personnel which took part in personnel training schemes. The statistics are adapted from Ds U 1985: 10 which, in turn, has derived its information from the so-called ULF investigation. The Table suggests that, although participation in company-sponsored personnel training seems to have increased in volume for all socioeconomic groups concerned, and despite proportional changes brought about by a current priority emphasis on education for the lower salaried groups, recruitment to enterprise sponsored personnel training or education appears to be unequally biased towards the higher socioeconomic stratum of salaried employees.

Table 8.6 Personnel Training by Socio-Economic Groups

Socio Economic Groups	1974	1975	1976	1978	1979	1980/81	1982/83
Unskilled Workers 1)	3,8	2,5	5,4	5,7	3,9	4,8	----
Semi Skilled Workers 1)	4,1	4,4	7,4	7,4	8,8	6,7	11,8
Skilled Workers 1)	7,9	6,4	9,1	8,4	10,9	10,6	13,5
Lower Salaried Personnel 2)	----	8,9	14,7	16,2	18,2	16,3	23,7
Middle Salaried Personnel 2)	----	19,2	25,8	25,0	27,6	25,2	36,4
Higher Salaried Personnel 2)	----	17,6	21,3	22,8	23,4	25,0	38,1
1) Workers total	5,1	4,5	7,4	7,3	8,1	7,4	12,3
2) Civil Servants, Academicians, Office Personnel	15,8	14,8	20,1	20,9	22,9	21,6	31,8

Source: Adapted from Ds U 1985: 10 Appendix 2

Findings of a 1975 survey of personnel training (SOU, 1977:92; Nordic Council of Ministers: NCM, 1979) indicate that larger enterprises are more likely to operate a training program than smaller ones. The larger a firm, the more frequently training consists of a mixture between internal within-the-company and external delivery. The results also suggest that 19 percent of all companies organized some kind of personnel training: about 70 percent of workers employed by companies with training took part in training programs as against 28 percent of all workers on the labor market. Almost twice the proportion of white col-

lar workers took part in company training programs compared to blue collar workers: 61 against 32 percent respectively. Also, the average duration of programs differs between categories of personnel. Courses attended by white collar workers lasted for about twice as long as those obtained by blue collar workers: 22 against 11 hours respectively (NCM, 1979). On the basis of HLF data, Olofsson et al. (1985: 68) write that 29 percent of all workers in the private sector took part in personnel training as compared to about 53 percent of state employees and 40 percent of all workers employed by a local municipality.

8.5 Concluding Remarks

The aim of Part II has been to outline some main developmental trends and factors which, apparently, have affected the design and implementation of recurrent education in Sweden from about 1960 to 1985. In Chapter 6, an attempt has been made to review such developmental trends in recurrent education in relation to the macro-level dimensions of the society as a whole. It is concluded that the adoption of the recurrent education thesis as representing a guiding principle for innovation and reform work in education has, in part, been a response to macro-level demands on the educational system as mediated and modified by prevailing ramifications of a cultural, economic and political nature. Examples of the latter are social interest groups and corresponding party politics, prevailing economic frameworks, the labor movement, and particularly, the educational institutions and other neo-corporate agents themselves.

Chapter 7 has focussed mainly on the internal meso-level dynamics between educational institutions, processes, and outcomes across formal and less-formal educational sectors. It has been concluded that actual change as regards structures and content of the educational system at large have been as much a result of deliberate macro-level policy commitments as a contemporary outcome of institutional responses to micro-level demands upon the educational system under the impact of a reform and growth dynamic extending from youth to adult educational sectors.

Chapter 8 describes various adult education facilities, forms, agents and sponsors. Some general conclusions reached are that the adult education sector in Sweden has expanded considerably in terms of its actual recruitment, its width of subjects, its budget, and especially, in terms of the rationales associated with the goals for recurrent adult education. It is concluded that recurrent adult education appears to have become a formal part of the regular system. Although efforts have been made to equalize adult education recruitment, social groups manifest distinct patterns of participation in recurrent education. The major constraining factor for recurrent education development is a shortage of economic resources. The 1960s and part of the 1970s were characterized by expansion. Presently, the dominant aspects of Swedish recurrent adult education are reorientation instead of expansion, and reorganization rather than reform.

PART THREE

RECURRENT EDUCATION AND SOCIOECONOMIC ACHIEVEMENT: A 45-YEAR LONGITUDINAL STUDY ON THE ECONOMIC BENEFITS OF RECURRENT EDUCATION

Chapter 9.

AIMS AND RESEARCH SETTING

9.1 Introduction

This third and empirical part of the present study attempts to assess and measure the meso-micro interaction dynamics between educational processes, and human perceptions and actions from childhood to the later phases of adult life.

Chapter nine briefly introduces the context of the problem and attempts to outline its ramifications. This effort is followed by the statement of the problem and the aims of the analysis. The final section describes the research setting of the "Malmö Longitudinal Study" and its procedures for data collection.

9.2 Context of the Problem

As has been pointed out in Part I and Part II, the educational field expanded tremendously since the late 1950s. Simultaneous with this development, societies faced problems of growth and control in terms of unbalanced demand and supply of education. One feature of the search for alternative approaches to educational development concerns the desire to improve coordination of education, work and leisure in an alternating manner across the life-span. Central to facilitating this principle are aims relating to a closer integration of educational structures and the better coordination of financing mechanisms. Assessing the relative importance of various antecedents on participation in education, and measuring eventual effects of the participatory act in terms of occupational mobility and economic benefits in a human life-span perspective is of crucial importance to both the design and implementation of recurrent educational policy.

An important research question relates to the issue whether or not the effect of formal educational attainment on subsequent socioeconomic success is stable across the human life-span. If resources such as the skill and knowledge acquired by means of education tend to become obsolete with advancing age, then the direct effect of formal educational attainment on occupational achievement is expected to decrease over time. It could be the case, however, that additional educational resources which may have been acquired during some later phase of life constitute a "disturbing" factor in the measurement of the net effects of schooling. In attempting to measure the net economic benefits accruing to formal schooling, it will be necessary to isolate the eventual effect of youth education from those of recurrent adult education.

In the 1970s and early 1980s, in Sweden, politicians and policy makers alike have demanded the implementation of a "second" educational route to socioeconomic mobility. The expansion of schemes for recurrent adult education received a top-priority. Hence, it would appear likely that many adults in Sweden have had an opportunity to obtain perhaps even substantial amounts of educational resources in addition to those obtained during the period of mandatory schooling and further education prior to entering working life on a more or less permanent basis. It could be the case that along with the extension of educational services into adult life a "new" mechanism for social mobility has been created. The rationales for recurrent adult education relate to the humanitarian aim of "improving quality of life", as well as to the economistic goal of "boosting productivity". With regard to the magnitude of these motives, it would appear important to estimate the extent to which recurrent adult education affects life-span socioeconomic achievement.

The study of the eventual effects of educational attainment on socioeconomic success has grown into a full-fledged tradition. Most research on the "enduring effects of education" has been limited in that it has offered "little to our understanding of possible effects of adult education on socioeconomic success" (Cookson, 1978: 18). Hyman, Wright and Reed (1975: 1) observe:

> "However good such research may be and however better it becomes in the future in the quality and the generalizability of the sampling, the accuracy and breadth of measurements, and the power of the design to isolate the net effects of schooling, it is bound to have one severe limitation. Because only the young are incorporated into most such research, it never can trace how long and how much the effects of schooling endure in the adult years. It is relatively easy to measure individuals while they are still in school or college or at the point of leaving... Once they have left, they become fugitives. Tracking them down is difficult and expensive and few attempt it. The research on the effects of education is beset by many problems. The prime requirement, however, in any study of the long-term effects of education is to catch the adult population...". (Hyman et al. 1975:1)

With regard to lifelong education Cropley (1985: 3080) writes: "by the 1980s only a minimal amount of research is capable of showing that the kinds of change envisaged by theorists indeed will have the effects claimed for them and that these effects in turn will lead to beneficial end results". Various authors have drawn attention to the necessity of initiating a research program into the enduring effects of youth educational attainment relative to the possible effects of recurrent or lifelong adult education on a number of macro and micro level criteria (Stoikov, 1975; Bergsten, 1977; Härnqvist 1977; Cookson, 1978; Lowe, 1982; Boshier and Collins, 1983; Rivera 1983; Timmermann 1983; IIEP 1984; Unesco, 1985a). Several authors emphasize the need to utilize longitudinal data sets when assessing effects of education (Blaug, 1976b; Featherman, 1980; Husén, 1981).

9.3 Statement of the Problem

The empirical part of this study aims at an examination of the meso-micro dynamic between recurrent educational processes and individual perceptions and actions across the life-span. More specifically, this inquiry attempts to assess and measure the possible effects of recurrent adult educational attainment on occupational achievement and earnings. This study is designed in such a way that the enduring net effect of formal schooling is isolated from those accruing to recurrent adult educational attainment. In other words, this inquiry aims at measuring the effects of recurrent adult educational attainment relative to effects of formal youth educational attainment on occupational achievement and earnings at the early career, mid career, and late career phases of life. Thus, this study not only aims at estimating the relative strengths of possible effects of youth and adult educational attainment on socioeconomic success, but also at indicating how those effects develop over time.

9.4 Research Setting and Data Collection

The analytical part of the study is based on only a relatively small section of the information gathered over a time-span of nearly half a century of longitudinal research in Sweden. This information is derived from the Malmö Longitudinal Study.

The Malmö study comprises information originally gathered for all 1,542 children who attended the third grade in the private and public schools in Malmö, a city in southern Sweden, in the year 1938. The vast majority of the children (87 percent) were 10 years of age at the time of the first data collection. When Hallgren conducted his data collection, the sample population represented the entire spectrum of economic status categories and cognitive ability levels in Malmö (Fägerlind, 1975). The data collected in 1938 by Hallgren was used in order to study the relationship between various social background factors and cognitive ability (Hallgren, 1939). The first follow-up study, conducted by Hallgren in 1942, only dealt with school careers of students who were transferred from primary to the academic junior secondary school. All male youths in Sweden, including those belonging to the Malmö population, were at some point in the late 1940s required to appear before military conscription boards. This provided an opportunity to gather additional data about educational attainment, cognitive ability and occupation at age 20 (Husén, 1950). Another follow-up effort was launched at the end of the 1950s. Apart from data collected from public registers such as information on incomes and welfare status, a questionnaire was used to gather supplementary data on adult education participation, occupational careers, spouses' social and educational background, self-reported quality of life, job satisfaction, and leisure time activities (Emanuelsson et al., 1968 and 1973; Husén et al., 1969). Another questionnaire with similar formats was used in the early 1970s (Fägerlind, 1975).

The most recent effort to gather additional data on occupation and adult educational participation by means of questionnaires was completed by 1985. By then it was established that only 4 men and 9 women of the "original" population of 1.542 had not been located. Information is available concerning educational and occupational careers, parental attitudes to education and work, home background measures, cognitive ability test scores at age 10 and 20, teachers' ratings of intelligence at age 10, and earnings from age 25 to about 55. Data about participation in adult education is available for a twenty-five year period. The 1964, 1971 and 1984 questionnaires respectively cover the periods 1959-63; 1964-70, and 1971-84.

The Malmö Study is unusual in several respects. It represents one of the oldest still active longitudinal data banks in the world, covering the whole period from 1938 to 1984. Also, case loss has been kept sufficiently low so as not to influence the validity and representativity of the study too much. Due to a tradition of preciseness and efficiency in public record keeping in Sweden, the accuracy of the information gathered over the years is exceptionally high (Fägerlind, 1981). After the first follow-up, the number of lost cases actually diminished. Recent case-loss in the set is largely attributable to decease of members of the "main generation". A detailed account of the various data gathering phases in the course of the Malmö Study may be found in the works of Hallgren (1939); Husén (1950) and Husén et al. (1969); Fägerlind (1975 and 1981); Prestegaard et al. (1979); and Furu (1985).

Table 9.1 presents an overview of the response frequencies and different categories of case losses as regards both males and females in the Malmö Study. If those who are deceased, living abroad or otherwise unreachable, are deducted from the sample, it will be seen that the response frequencies in relation to the 1964, 1971 and 1985 questionnaires are high, especially if the lengths of the time-lapses are taken into consideration.

Table 9.1 Malmö Study: Response and Case Loss, 1964-84.

	1964		1971		1985	
	male	female	male	female	male	female
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Chapter 10.

REVIEW OF THE RESEARCH LITERATURE

10.1 Introduction

This chapter presents an overview of relevant literature with a focus on the exploration of status attainment processes. The major purpose of this literature review is not to describe the findings of research on the relationship between formal youth education and socioeconomic success as much as it is to give some results of studies on the relationships between recurrent adult education and subsequent status attainment processes.

The study of educational attainment as an antecedent of socio-economic success has received much research attention. A vast body of literature has gradually come about with an explicit focus on exploring casu quo explaining aspects of the process whereby socio-economic background and early cognitive ability are converted into career achievement by means of educational attainment (Blau and Duncan, 1967; Jencks et al., 1972; Duncan et al., 1972; Hauser 1972; Sewell and Hauser, 1975; Fägerlind, 1975; Featherman and Hauser, 1978; Behrman et al., 1980; Halsey et al. 1980; Ganzeboom, 1984; Hoffman 1984; Kiker et al., 1985; Graham et al., 1985). Haller (1982: 6) writes:

> "By a status attainment model, I mean any set of concepts that purports to describe the status attainment process of certain definable sets of a population at a given time and place, and that uses any set of status and antecedent variables that are amenable to systematic statistical and mathematical analysis".

Typically, the status attainment model consist of determinants of cognitive ability, determinants of educational attainment, and determinants of socioeconomic success. Because the foci of this study concern antecedents and outcomes of recurrent adult education, the review of literature is organized around:

(1) Predictors of recurrent adult educational attainment;
(2) Outcomes of recurrent adult educational attainment.

10.2 The Concept of Educational Attainment

Recurrent education comprises front-end and adult education or training. Education which is undertaken immediately or within 4 years after the completion of upper-secondary schooling is, in the context of this study, considered as belonging to youth or front-end education. For the definition of "recurrent" and "front-end" education, the reader is referred to Chapter 2 and Chapter 5 of the present study.

Educational attainment comprises, in the context of recurrent education, all kinds of educational resources acquired both by means of front-end education and adult education and training. In this terminology adult educational attainment comprises all formal and non-formal educational resources obtained alongside working-life or during a period of study commenced after four years of work. Informal educational resources are excluded. In a technical sense, it is acknowledged that informally obtained educational resources belong to the idea of "adult educational attainment". This is especially so since, apparently, about 20 percent of major learning efforts take place in professionally guided frameworks and as much as 80 percent are self-planned (Griffin, 1985; Tough, 1985). On the basis of the difficulties encountered when attempting to include self-directed learning efforts of autodidacts, the decision has been taken to exclude the informally obtained educational resources from the working definitions adopted.

10.3 Predictors of Recurrent Adult Educational Attainment

Most of the existing empirical work in this area has focussed on the formal components of recurrent educational attainment. Generally, the literature dealing with determinants of formal youth educational attainment or with formal "front-end" higher educational attainment has expressed an interest in a similar set of variables. These principal variables commonly comprise home background characteristics such as parental educational attainment, parental socioeconomic status, and family size. A second set focusses on characteristics of the student, such as on early or late cognitive ability and personality attributes in terms of specific perceptions and actions. Some researchers have included variables thought to represent dynamic measures of interaction processes going on in the home and the schools.

Few issues have extracted as much heated debates in education and psychology as the heridity-environment or "nature-nurture" controversy. Much of this debate concerns the roles of family background, early cognitive ability and educational attainment in determining distinct life chances (Husén, 1975). The social political implications of the "nature-nurture" controversy are enormous. Quite different estimates of the relative importance of genetic and environmental factors in determining cognitive ability have been forwarded (Jensen, 1972; Jencks et al. 1972; Behrman et al., 1980). A basic compromise holds that there are certain rules governing the functioning of qualitative changes in cognitive ability by which the heriditary and environmental factors continuously interact. Anastasi (1958) writes that the nature-nurture interaction can be regarded as a multiplicative interrelation in which the presence of each source is totally intertwined with the other. As a consequence, it is not possible to isolate the net effect of these factors (Lerner, 1976). In many status attainment models cognitive ability is included as an endogenous variable posited after socioeconomic attributes of the family (Bulcock et al., 1974; and Fägerlind, 1975).

In order to explain the relationships between family of origin and socioeconomic success more fully, a variety of intervening process variables thought to mediate the effects of family and academic ability on educational attainment were introduced. In effect the social psychological intervening variables comprise indicators dynamically measuring home and school processes. An example of home process indicators is parental expectation for their child's educational or occupational attainment. Examples of school process indicators are expenditures per pupil, class size, teacher ratings of their students cognitive ability, and absenteeism (Hauser, 1972; Sewell and Hauser, 1975; Otto and Haller, 1979; Haller, 1982; Chinapah, 1983; Furu, 1985). Other studies confirmed the existence of moderately strong relationships between social psychological mechanisms, home of origin and ability, and their importance for "achievement motivation" and educational or occupational success (Kiker et al., 1985). Another component of intervening variables thought to mediate effects of social origins and cognitive ability on educational attainment relates to the school. The importance of the school itself as a crucial factor in the process whereby home status attributes and ability resources are converted into scholastic achievement is supported by empirical evidence (Noonan, 1976; Munck, 1979; Eder, 1982; Chinapah, 1983; Carnoy et al., 1985).

Adult education does not operate in a vacuum (Rubenson, 1975). An important issue relates to whether indicators such as those discussed above with regard to youth and front-end educational attainment are equally relevant when studying recurrent adult educational attainment. In an effort to predict the likelyhood of participation of a particular population in recurrent adult education, findings have pointed to the relative importance of indicators relating to variables such as family of origin, the attitude to adult education, expectation as to its usefulness, feelings about own educational career, self-perceived quality of life, patterns of leisure time behavior, level of acquired formal education, job satisfaction and socioeconomic prestige.

The use of socioeconomic origin as a predictor of adult education recruitment has yielded inconclusive results. Significant though weak relationships between social origin and adult education participation have been reported for indicators such as educational attainment and socioeconomic status of the parents (Johnstone et al., 1965; Husen et al., 1969; LO, 1971; Dickinson, 1971; Rubenson, 1975; Cockerham, 1984). Knox (1970) found no relationship between measures of cognitive ability and the extent of participation in adult education. Emanuelsson (1973) reported that the proportion of participation did decrease as a function of cognitive ability, especially with regard to the women. Rubenson found that the participants in adult education programs generally had scored significantly higher on ability tests during childhood. Rubenson (1975: 194) reported that the differences in recruitment in some cases disappeared when the types of adult educational activities were kept under control. Several authors (Johnstone and Rivera, 1965; Knox, 1970; and Rubenson, 1975) suggest that the ability-participation dynamic probably operates mostly indirect through social psychological processes and formal front-end educational attainment. Various socio-demographic indicators such as age, sex, marital status,

number of children in the home, or rural versus urban grade of place of residence, have shown significant relationships with participation in adult education (Bergsten, 1977; Boshier and Collins, 1983; Gooderham, 1984).

Dynamic processes taking place in home and school environments constitute important parameters of socialization. The home of origin and the peers provide a more effective and encompassing setting in relation to the outcomes of socialization processes then do the school and workplace (Mortimer and Simmons, 1978). Socialization is likely to be most pronounced in situations of high affectivity. Gecas (1981: 173) writes:

> "Roles, norms and beliefs are major cultural contents of socialization which is transmitted from parents to children... Parental support has the most favorable socialization effects on children, that is, their development of self-esteem, sense of competence, conscience, internalization of adult standards, and overall development of achievement motivation".

The results of studies on childhood socialization indeed point to the crucial role of the home in determining self-concepts, dispositions, values and norms. Several scholars have reported that "lower" and "middle" class families differ with regard to the role of the home in socialization processes (Bush and Simmons, 1981). Boshier (1977) mentions that social psychological variables which mediate between these environmental background variables and adult education recruitment are associated with motives for participation. Motivational orientations of people reflect their needs, cognitive styles, and personality states, that mediate the perceptions of opportunity for participation. Rubenson (1975) reported that, after spouses, the parents were most commonly mentioned as having positively affected interest in adult education participation. Johnstone and Rivera (1965) found a positive relationship between parents' attitude to the educational career of the child and the child's later interest in participation. This is consistent with Rubenson (1975) who reported a significant difference between non-participants and participants as regards the strengths of the relations between parental educational encouragement and participation.

Researchers have argued for the importance of the school as a transitional institution with a largely socializing or social reinforcing function. An essential feature of the school is to confront the students with a formal evaluation of performance. Hardwell (1984: 461) points to the core of the education-motivation-recruitment dynamic by stating that "empirical evidence suggests that expectancies tend to increase after success and to decrease after failure experiences". Whereas success in the school exerts positive effects on self-esteem and confidence, failure would appear to have an opposite impact (Gecas, 1981). Failure or other negative experiences associated with a school career increase the probability of non-participation in adult education. The dissatisfaction-disassociation dynamic may well constitute the most important explanatory variable. Dickinson (1971) contends that, of all variables which have been studied as a predictor of adult education participation, the amount of schooling obtained is the most relevant single factor. Similar findings have been reported by Berry (197.); Lengrand (1975); Cookson (1978); and Boshier and Collins (1983).

Other predictors of participation in adult education relate to motivational orientations, interests, expectations and values. Questions concerning motivational orientations in relation to participation in adult education have received much attention. Houle (1961) suggests that a participant can be characterized as goal, learning, or activity oriented. Berry (1971) mentions need hierarchy, developmental tasks and learning orientations. On the basis of the results obtained by means of the Education Participation Scale (EPS), Boshier (1971; 1977) distinguishes between the deficiency-motivated and growth-motivated learner. Dickinson et al (1975: 14) found that the relationship between motivational orientation and autonomous learning was identical to the relationship observed between motivational orientations and adult education participation. The findings of a meta analysis of research based on cross-national EPS data for 12,191 learners support the assumption that socio-demographic factors influence motivational orientations in relation to recruitment to adult education (Boshier and Collins, 1981). Motivational orientations are regarded as forces mediating between various antecedent variables and recurrent adult education. According to Boshier and Collins (1983), although many socio-demographic and nearly all socioeconomic variables significantly relate to motivational orientations, these variables account only for a minimal amount of the variance in EPS scores. Haeberlin et al. (1985) report similar results for EPS motivational orientation research in the Federal Republic of Germany.

Socioeconomic variables such as earnings and job status of the respondent appear to be good predictors of the type and length of adult education activities attended (Boshier et al., 1981). The significance of socioeconomic factors for predicting adult education participation is widely acknowledged (Johnstone and Rivera, 1965: Knox 1970: Lengrand, 1975: Rubenson, 1975: Lowe, 1982: Boshier and Collins, 1981: Olofsson and Rubenson, 1985).

1.4 Outcomes of Recurrent Adult Educational Attainment

A major research question in the study of the antecedents and outcomes of recurrent education involves the choice of outcome variables. Economists frequently analyze the private benefits of education in relation to physical and human capital inputs. Given the interdependency between private and social rates of return there would appear to exist a linkage between micro and macro levels of economic analysis. The present study will only examine the relationship between formal "front-end" as well as "recurrent adult" educational attainment and private economic benefits. In other words, only the micro-meso dynamic will be empirically investigated. At this micro level of analysis, the most commonly treated endogenous criterion variables of status attainment research are occupation and earnings.

Jencks et al. (1972: 8) write that it is "random luck" instead of individual talent, ability or background which accounts for most of the variance in socioeconomic success. Others attach a

strong belief to the independent effect of schooling on status attainment (Lipset and Bendix, 1963; Husén, 1974). Substantial effects of formal schooling on occupational status attainment have been reported by Blau and Duncan (1967), Coleman (1973), and Fägerlind (1975). Nevertheless, Behrman et al. (1980) contend that "these results do not necessarily imply that schooling will lead to occupational mobility". Longitudinal studies support the assumption that "youth" or "front-end" educational attainment is the most important observed predictor of occupational status. Longitudinal research confirmed the hypothesis formulated by Becker (1968), Mincer (1968) and Stoikov (1975) that the effect of educational attainment on job status is not constant but subject to change over the life-span (Fägerlind, 1975; Jencks et al., 1979). Stolzenberg (1975) writes that the large coefficient generally found for acquired level of front-end schooling as a determinant of earnings implies that educational attainment constitutes not skills directly relevant to the particular tasks of some occupation but rather the trained capacity to learn, upon which the employer makes an additional investment in the particular kind of human capital peculiar to the operations of the organization.

Initially, analyses of effects of education on earnings were, in the tradition of human capital, carried out by estimating direct and foregone costs of given increments of schooling and discounting differentials between earnings profiles of workers with different levels of educational atainment (Mincer, 1979). Generally, such studies have pointed to the fact that average age profiles of earnings show a rapid growth during the first decade of working life, lesser growth subsequently, and a stabilization in the third or fourth decade (Becker, 1975; Blaug, 1976a; Bowman, 1978). Research using regression techniques in combination with path analysis have isolated substantial total effects of youth educational attainment on life-time earnings. Mincer (1974) shows empirically that the best time to measure the effect of educational atainment on earnings of a cohort of men is about eight years after the completion of schooling. At this point differences in schooling explain between 30 and 50 percent of the inequalities in annual earnings. Other studies confirm the significance of schooling and occupational status for earnings power (Sewell and Hauser, 1975; Fägerlind, 1975). However, recursive status attainment models are not consistent with regard to the proportion of the variance in earnings they explain. The variance explained ranges from only five percent to as much as fifty percent (Behrman et al., 1980).

Although a substantial body of research exists with a focus on the relationship between acquired level of youth or front-end education and socioeconomic status, quite the opposite is true for the relationship between adult educational attainment and socioeconomic achievement. Human capital theorists claim that post-school investment in education is an important factor in explaining the age-earnings differentials between workers with similar educational backgrounds. Mincer (1968) argues that it is important to notice that schooling is neither an exclusive nor a sufficient method of training a labor force. Graduation marks the start of a more specialized and prolonged process of acquisition of occupational skills. Mincer (1968: 534) applies

data on returns to education and on-the-job training provided by Becker (1968) to calculate comparable statistics about the economic returns to education and training in relation to its costs. Mincer (1968: 534) concludes: "generalizing boldly, the data suggest that pre-tax money rates of return on public and private costs are similar for school and on-the-job training". It appears that private rates of return are lower for selected instances of on-the-job training than for education at college levels. Rumberger (1984) shows that, in the U.S., the economic returns to college education were fairly stable over time from the late 1960s to the mid-1970s. This apparent but not clearly documented stability over time in the returns to an investment in education and training may conceal a decline in the rate of return to youth education (Mincer, 1968). Similar observations with regard to the importance of on-the-job training and work experience in explaining differences in age-earnings profiles are made by Becker (1975), Stolzenberg (1975), Rao and Datta (1985). Thurow (1967: 233) writes: "the returns from training partly depend on the level of education already possessed by a trainee. Benefits from education and training are larger than the sum of their returns separately". Statements of this kind imply that resources which are acquired by means of recurrent adult education may influence socioeconomic status attainment.

Research capable of providing evidence about the relationships between adult educational attainment, occupational achievement and earnings is scarce. Devlin (1970) studied the relationship between recent adult education participation and occupational mobility. His findings were that infrequent participation had no clear effect on upward mobility. Frequent participation in adult education had a positive relationship with occupational mobility regardless of initial job status. Hyman et al. (1975: 93) regard enrolment in adult education as an effect of schooling, and as a link in the growth of knowledge. They conclude that, because adult educational attainment apparently does not distort the overall measures of educational attainment, adult education "need not be controlled for nor eliminated from our comparisons". The results of a tracer-study on a supplementary U.S. training program (STP, 1980) show that participation was found to influence occupational mobility and earnings. Cookson (1978) studied the probable effects of participation in adult education programs of small-scale Mexican-American businessmen on occupational status as measured by earnings. His path model comprises also youth or front-end educational attainment and a measure of work experience. The findings indicate that neither youth educational attainment nor adult education participation appeared to exert a direct and significant effect on earnings. Adult education, though, exerted a moderately strong indirect effect on later earnings via social-psychological intervening variables. In a study about participation in study circles and the creation of political, economic, and cultural resources at the individual level, Borgström and Olofsson (1984) found that persons participating in study circles consistently and significantly reinforced their political and cultural resources. No conclusive evidence was found regarding a relationship between participation and subsequent incomes. In conclusion, Borgström and Olofsson (1984: 6) write: "participation in study circles partly accounts for the growth of individual resources".

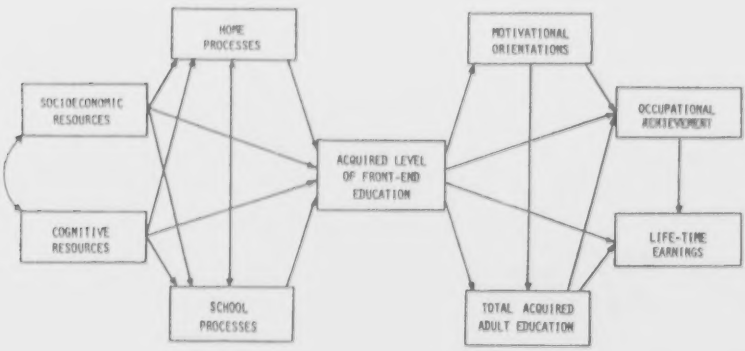
10.5 The Resource Conversion Theory

The resource conversion theory presents a theoretical focus to research about the process whereby personal and environmental resources are converted into socioeconomic prestige. Fägerlind (1975: 33) summarizes the resource conversion theory:

1. The socioeconomic attainment process is divided into components within which conversions of resources take place.
2. Environmental resources such as those of the home, the school, and the job, are converted into personality resources or other environmental resources.
3. Environmental and personality resources interact in such a way that outcomes of conversions are different for different combinations of resources inputs.

In conclusion, on the basis of reviews of research literature, the following components are considered relevant for inclusion into a status attainment model: socioeconomic status of family of origin; early cognitive ability; the indicators of home and school processes; formal schooling, motivational orientations, recurrent adult education attainment and socioeconomic status. Family background and cognitive ability affect home and school processes which are important to youth educational attainment (Furu, 1985). These processes are reciprocally interdependent. For instance, parental attitudes to their children's education partly depend on how well the children do in school. Parental attitudes and support to education may influence the teacher's impression of the child's cognitive ability. Family background and ability, together with an interaction dynamic between home and school processes, affect front-end educational attainment. Educational attainment influences motivational orientations, recurrent adult education participation, occupational success, and earnings. Motivational orientations affect adult education participation and occupational achievement. Adult educational attainment influences occupational status and earnings. Figure 10.1 shows the resource conversion model based on assumptions mentioned above. The model is partly adapted from Furu (1985).

Figure 10.1 A Resource Conversion Model



The resource conversion theory contends that "the resources a person has access to in early childhood, mainly family resources and personality assets, are converted mainly through the formal educational system into marketable assets" (Fägerlind, 1975: 78). Crucial to the theory is that the explanatory power of assets measured during childhood and early maturity on, for instance, occupation and earnings, may change as a function of the phase of the life-span considered. The empirical basis for career development theory is premature and inconclusive (Hall, 1976; Gill et al., 1983: 20). The life-span approach to career development may benefit from the utilization of a longitudinal data set (Super, 1980; Schiefelbein and Farell, 1982). Instead of applying a particular adult life-span developmental theory, a career development perspective is used to identify critical career moments. Schein (1978: 40-46) writes:

> "Early career refers to a period from the late twenties to the mid-thirties; the late thirties to the early forties mark the mid-life transition; and the period of relative stability and disengagement from the fifties to retirement age is referred to as the late dimension of the career cycle".

10.6 Hypotheses

The hypotheses accruing to the first part of the model (i.e., socioeconomic resources to acquired level of youth "front-end" education) have been formulated and tested with LISREL methods by Furu (1985: 38). These hypotheses are not reproduced here. The first four variables in the model are incorporated with a view to discerning their relationships, if any, with recurrent adult educational attainments. The hypotheses presented below pertain to the "second part" of the resource conversion model; that is, from acquired youth education to earnings. Since one aim of this study is to explore how the relationships between youth education, recurrent adult education, and socioeconomic achievement change over time, the same set of hypotheses will be tested at three different points in time. Point t=1 refers to "early career"; point t=2 refers to "mid career"; and point t=3 to "late career".

Hypothesis 1.
Acquired level of front-end education has a direct effect on motivational orientations in early (1.1), mid (1.2) and late career (1.3).

Hypothesis 2.
Acquired level of front-end education has a direct effect on recurrent adult educational attainment in early (2.1), mid (2.2) and late career (2.3).

Hypothesis 3.
Acquired level of front-end education has a direct effect on occupational achievement in early (3.1), mid (3.2), and late career (3.3).

Hypothesis 4.
Acquired level of front-end education has a direct effect on earnings in early (4.1) mid (4.2) and late career (4.3).

Hypothesis 5.
Motivational orientation has a direct effect on recurrent adult educational attainment in early (5.1), mid (5.2), and late career (5.3).

Hypothesis 6.
Motivational orientation directly affects occupational success in early (6.1), mid (6.2), and late career (6.3).

Hypothesis 7.
Motivational orientation has an indirect effect as mediated by acquired adult education and occupational achievement on earnings in early (7.1), mid (7.2), and late career (7.3).

Hypothesis 8.
Total adult educational attainment has a direct effect on occupational achievement in early (8.1), mid (8.2) and late career (8.3).

Hypothesis 9.
Total adult educational attainment has a direct effect on earnings in early (9.1), mid (9.2) and late career (9.3).

Hypothesis 10.
Occupational achievement has a direct effect on earnings in early (10.1), mid (10.2), and late career (10.3).

The research literature suggests that the effects of acquired level of youth or front-end education on occupational achievement and earnings change as a function of time dynamics. Also, it is suggested that the effect of acquired level of recurrent adult education on occupational achievement and earnings vary over time. The major time-dynamic related hypotheses are:

Hypothesis 11.
The total effect of youth educational attainment on occupation achievement increases from early to mid career (11.1) and decreases from mid to late career (11.2).

Hypothesis 12.
The total effect of recurrent adult educational attainment on occupational success increases from early to mid career (13.1) and increases from mid to late career (13.2).

Hypothesis 13.
The total effect of youth or front-end educational attainment on earnings increases from early to mid career (12.1) and decreases from mid to late career (12.2).

Hypothesis 14.
The total effect of recurrent adult educational attainment on earnings increases from early to mid career (14.1) and increases from mid to late career (14.2).

CHAPTER 11.

METHODOLOGY

11.1 Introduction

This chapter presents the definitions and the procedures for measurement of indicators which are used in the analysis. The data set has been derived from the Malmö Study. It consists of 842 men born around 1928 in Malmö. The variables are summarily introduced in Table 11.1 below. It presents means and standard deviations of the variables. The mnemonics introduced by this Table, which will be used throughout subsequent chapters, are matched with their corresponding symbol designations in Table 11.3. The final sections present the equations associated with the resource conversion models tested, discuss the analytical methods utilized, and specify particular methodological issues relating to the analysis attempted.

Table 11.1 Descriptions, Means, and Standard Deviations of non-standardized variables.

SYMBOL	LONG NAME	MEAN	S.D.	CORRESPONDING CONCEPT
SES38	Socioeconomic Status 1938	3.10	1.00	Socioeconomic Resources
IQ38	Cognitive Ability 1938	97.7	16.0	Cognitive Resources
PAEDATT	Parents' attitude to their Child's Education	2.90	1.15	Home Processes
TEACHIQ	Teacher Ratings' of the Students' Cognitive Ability in 1938	2.90	1.22	School Processes
ACLEV	Acquired Level of Front-end Education	2,92	1.34	Acquired level of Front-end Education
ASPED	Aspiration for own Child's Educational Attainment, 1964 and 1971	3.01	1.06	Motivational Orientations
ADEC64	Acquired level of Adult Education from 1959 to 1963	2.34	1.59	Acquired Adult Education
ADEC71	Acquired level of Adult Education from 1964 to 1970	2.56	1.60	Acquired Adult Education
ADEC84	Acquired level of Adult Education from 1971 to 1983	2.91	1.48	Acquired Adult Education
ACACUM	Acquired level of Adult Education period 1959-1970 collapsed	1.44	2.44	Acquired Adult Education
ACLAD	Acquired level of Adult Education period 1959-1983 collapsed	12.4	23.9	Acquired Adult Education
OCC58-71	Occupational Prestige 1958-1971	1.85	1.37	Occupational Achievement 1971
OCC80RX	Occupational Prestige 1980	1.08	1.50	Occupational Achievement 1980
LOGINC80	Logarithmic Pre-Taxed Earnings 1980	4.31	0.41	Life-time Earnings in 1980

11.2 Definition and Measurement of Variables

Socioeconomic Status 1938 (SES38)

Hallgren (1939) assigned each child in the Malmö Study to one of four socioeconomic strata based on education and occupation of the father and family earnings. This variable is described by Husén et al. (1969: 43); and Fägerlind (1975: 47).

Cognitive Ability 1938 (IQ38)

Hallgren designed tests to measure cognitive ability. In the data bank of the Malmö Study, test scores on cognitive ability are converted to a standardized scale with a mean of 100 and a standard deviation of 15 units (Husén 1950: 36). The estimated reliability coefficient of this variable is .85 (Husén, 1951).

Parental Attitude to their Child's Education (PAEDATT)

The question "what did your parents think of your schooling?" was asked in 1963. The question was answered in retrospect by the respondents. The following answer alternatives constitute the scale for this variable (Furu, 1985: 115):

1. They thought I should leave school as soon as possible to earn a living (1 point).
2. They did not give any clear opinion about my schooling (2 points).
3. They thought it was a good thing to go to school, but they did not care what kind of schooling I got (3 points).
4. They wanted me to get as much schooling as possible (4 points).

The parents' attitude to their child's education is considered an expression of the individual's feeling of parental support for schooling. It constitutes one aspect of home processes of significance for youth educational attainment (Furu, 1985).

Teacher Ratings of Students' Intelligence (TEACHIQ)

In conjunction with the administration of intelligence tests, the teachers were asked to rate students' cognitive abilities. A five point scale ranging from Gifted, via M+, M, M- to Weak was used for this purpose. These ratings reflect the teachers' impression of their students and teacher-student relationships in the classroom. They are assumed to constitute a measure of school processes relevant to scholastic performance (Chinapah, 1983; Furu, 1985). Husén et al. (1969) describe this variable.

Acquired level of Front-end Education (ACLEV)

Most researchers use a scale consisting of the number of years of formal schooling obtained by a respondent. Fägerlind (1975: 47-48) found significant differences in case acquired level of schooling was used. The six ordinal categories of ACLEV are:

1. "Left folkskola when mandatory school age expired according to School Act § 48, which means that the individual did not complete folkskola.
2. Six or seven years of folkskola.
3. Folkskola followed by some post-school vocational training.
4. Realskola (academic high school graduate) or gymnasium training but without matriculation examination.
5. Matriculation examination or some post-realskola vocational training like teacher training, economic or technical training.
6. Some kind of university training".

Fägerlind (1975: 47-48), also in Furu (1985: 116).

Aspiration for Own Children's Education (Asped)

"Reasons for participation" in adult education have been coded from the 1971 and 1984 questionnaires. In 1964 other questions were asked. Due to the time-bound character of this study, at least two conceptually similar variables constituting measures of motivation with regard to participation in adult education at alternative points in time. On the basis of the results of EPS research (Boshier and Collins, 1983; see also Chapter 10), a factor analysis was performed on variables thought to represent such measures. The findings are presented in Table 11.2. The variables "interest in adult education 1964, 1971" emerge as different factors and are, although conceptually relevant, rejected. "Aspiration for own child's schooling 1964 and 1971" load together and are fairly similar to PAEDATT which is used as the indicator of home processes earlier in the model.

Table 11.2 Items on social psychological conditions, motivational orientation and recurrent adult education: Test results for a principal components analysis. (Standardized scoring coefficients).

Item labels	Factor 1	Factor 2	Factor 3	Factor 4
Interest in ADEC64				0.74
Interest in ADEC71		-0.10	-0.14	-0.15
Satisfaction occ career	0.15	0.25		
Reason occupational choice		-0.14		0.54
Feelings about present job 64	0.15	0.24		
Feelings about present job 71	0.13	0.15		0.10
Success in life 1964	0.17	0.21		
Success in life 1971	0.17	0.14		0.15
Aspiration for education 64			0.61	
Aspiration for education 71	0.13		0.54	
Adult education 1959-1964	0.20	-0.21	-0.14	
Adult education 1959-1071	0.22	-0.22	-0.16	
Adult education 1959-1984	0.23	-0.20	-0.11	

*) Loadings lower than .10 have not been included here.

The variables "aspiration for own child's education" are used as the indicator of respondent's attitudes to recurrent adult education on the assumption that the parents who highly value education for their own children are more likely to appreciate additional recurrent education for themselves when compared to the parents who regard the formal educational careers of their children of less overall importance. The variables ASPED64 and ASPED71 are not entirely similar. ASPED64 consists of answers to the question: "How much education would you like your child to get"?. The response alternatives are:

1.	Compulsory school only (9 years)	(1 point)
2.	Continuation school after grade 9	(2 points)
3.	Vocational school after grade 9	(3 points)
4.	Upper-secondary school (gymnasium)	(4 points)
5.	Higher education (university)	(5 points)

The variable ASPED71 is constructed on the basis of responses to the question "how much education would you like your children to get"? The ordinal scales are composed of:

1.	Compulsory school only (9 years)	(1 point)
2.	1-2 years after compulsory school	(2 points)
3.	3-4 years after compulsory school	(3 points)
4.	> 4 years after compulsory school	(4 points)

Level of Adult Education, incidental periods (ADEC)

Five variables are used as indicators of recurrent adult educational attainment: ADEC64, ADEC71, ADEC84, ACACUM and ACLAD. The ADEC variables are similarly constructed and accrue to the period intervals 1959-64 (early career), 1965-71 (mid-career), and 1972-84 (late career). Based on the discussion in Chapter 7, the scales initially consisted of: (1) NONPAR: non-participation; (2) NOCGEN: non-credential and general leisure related recurrent adult education; (3) NOCJOB: non-credential and job related recurrent adult education; (4) CREGEN: credential and general leisure related recurrent adult education; (5) CREJOB: credential career related recurrent adult education.

The index is based on the assumption that non-credential adult education has less relevance to socioeconomic achievement than credential adult education; and, that general adult education has less effect on socioeconomic success than a career-related type. These assumptions proved not entirely accurate. More in particular, variables constructed on the basis of the leisure-career distinction gave better estimates than the fit obtained with variables using another ordering. Therefore, the analysis used this second set of recurrent adult educational variables.

The ADEC series of variables though to measure recurrent adult educational attainment is built on the basis of the assumption that job related adult education, whether credential oriented or not, is more relevant to socioeconomic success than general and leisure related recurrent adult education. These variables (ADEC64, ADEC71 and ADEC84) consist of the categories:

1	NONPAR:	Non-participation	(1 point)
2	NOCGEN:	Non-credential general-leisure related	(2 points)
3	CREGEN:	Credential general-leisure related	(3 points)
4	NOCJOB:	Non-credential job-related	(4 points)
5	CREJOB:	Credential job-career related	(5 points)

Coding of ADEC64 was considerably more problematic than ADEC71 or ADEC84. Some of the reasons are that: (1) determination of the level of a program was difficult prior to the 1968 reform; (2) the 1964 questionnaire used open-ended questions instead of "tick box" formats used in 1971 and 1984; (3) prior to the 1968 reform recruitment was marginal and adult education modes were less integrated with the regular system. Coding of ADEC64 was not accurately possible without consulting the information which was given in response to the "reasons for participation" item battery. In case respondents report to have taken part in more than one adult education program in a certain period, the program with the highest score on the ADEC scale is criterion. The determination of levels of adult educational attainment is subject to change across time. Its implications for coding are reviewed in Chapters 7 and 8 of this study.

Index of Acquired Level of Adult Education (ACLAD)

Two composite variables represent a measure of total recurrent adult educational attainment. ACACUM refers to recurrent adult educational attainment from 1959-71 and is constructed on the basis of ADEC64-71. The ACLAD variable represents a measure of adult educational attainment from 1959-84 and is based on all three ADEC variables. Appendix 1 presents the formats used for constructing ACACUM and ACLAD. These variables are coded with the second format. The ACACUM scale ranges from 1 to 9 with 1 being the lowest (NONPAR-NONPAR) and 9 the highest score (CREJOB-CREJOB). The scale of the ACLAD variable ranges from 10 to 72 with 10 being the lowest (NONPAR-NONPAR-NONPAR) and 72 the highest score (CREJOB-CREJOB-CREJOB). For cross-tabulations a condensed version of ACLAD is used. This variable (ACLADUC) is composed of seven categories:

1.	NONPAR	non-participation	range 10
2.	LOWPAR-	low participation level minus	range 11-21
3.	LOWPAR+	low participation level plus	range 22-23
4.	MEDPAR-	medium participation level minus	range 34-42
5.	MEDPAR+	medium participation level plus	range 43-53
6.	HIGPAR-	high participation level minus	range 54-63
7.	HIGPAR+	high participation level plus	range 64-72

Occupational Achievement (OCC)

The Malmö Study contains data about occupational careers from 1948 to 1983. The information is coded by means of the Nordic Occupational Classification scheme (NYK). Variables thought to measure occupational prestige are available for the years 1953 (OCC53), 1958 (OCC58), 1963 (OCC63), 1971 (OCC 71), and 1980. OCC53-71 have been similarly coded (Fägerlind, 1975: 48). The intervals are: (1) unskilled laborer; (2) semi-skilled worker;

(3) skilled blue collar; (4) foreman or equivalent; (5) senior clerk; (6) leading position, member of established profession. OCC80 is differently coded because (a) the distinction between unskilled, semi-skilled, and skilled laborers is increasingly difficult to conceptualize; and (b) during the period 1958-80, there have been considerable shifts in the skills structure of the wage earning population (Ultee, 1984; Huijgen, 1984). The scale used for OCC80RX is adapted from Pöntinen (1983: 41) and Peschar (1984: 131-32): (1) unskilled blue collar; (2) skilled blue collar; (3) lower white collar; (4) middle white collar; (5) upper white collar and free professionals; (6) independent large-scale entrepreneurs.

Earnings (LOGINC)

The earnings variables INC53, INC58, INC63, INC68, INC71, INC 78 and INC80 are based on the pre-tax earnings declared on the income tax forms after revision by tax officials. Information is recoded to the nearest Skr 1000. At the lower extreme, the cut-off points used are: INC53<=6000; INC58<=6000; INC63<=9000 INC68<=11,000; INC71<=12,000; INC78<=21,000; INC80<=24,000. An upper limit is not used. LOGINC53, LOGINC58, LOGINC63, LOGINC 68, LOGINC71, LOGINC78 and LOGINC80 are the natural logarithms of the earnings measures from 1953 to 1980.

Table 11.3 presents variables and corresponding construct item number, symbol designation, period when measured, approximate age of respondents at that time, and critical career moments.

Table 11.3 Summary Designation of Variables

Construct Item	Symbol Designation	Variable Short Name	Measurement Period	Age of Respondents	Critical Career Moments
1	S	SES38	1938	10	Early Childhood
2	I	IQ38	1938	10	Early Childhood
3	P	PAEDATT	--	--	Early Childhood
4	T	TEACHIQ	1938	10	Early Childhood
5	A	ACLEV	1935-52	7-24	Childhood, Adolescence, Early Adult Maturity
6	M	ASPED64	1962-63	35	Early Career Moment
		ASPED71	1970	42	Mid Career Moment
7	V	ADEC64	1959-63	35	Early Career Moment
		ADEC71	1964-70	42	Mid Career Moment
		ADEC84	1971-83	55	Late Career Moment
		ACACUM	1959-70	42	Mid Career Moment
		ACLAD	1971-83	55	Late Career Moment
8	O	OCC58	1958	30	Early Career Moment
		OCC63	1963	35	Early Career Moment
		OCC71	1971	43	Mid Career Moment
		OCC80RX	1980	52	Late Career Moment
9	E	LOGINC58	1958	30	Early Career Moment
		LOGINC63	1963	35	Early Career Moment
		LOGINC71	1971	43	Mid Career Moment
		LOGINC80	1980	52	Late Career Moment

11.3 Methodological Issues

Results of cross-tabulations between variables are reported in Appendix 3. Other analytical methods applied are path analysis using ordinary least squares regression (OLS), and the method of instrumental variables (IV). The testing of the hypotheses forwarded in Chapter 10 requires a tool for statistical causal prediction. Blalock (1961: 20) writes:

> "The most highly developed tool we have available for thinking in terms of causal models is mathematical reasoning. To anticipate our later arguments, we can make use of a set of simultaneous equations written in such a manner as to allow for the possibility of asymmetrical causal relationships. This set of equations, plus certain assumptions about the error term (e.g. the outside variables), permits us to make a prediction about the magnitude of correlation and regression coefficients which are then checked against data from the real world".

Analyses using structural equations are designed to determine the strengths of hypothesized causal relationships. Equations provide the blueprint for subsequent analysis. Mathematically, the conceptual or hypothetical model (see Figure 10.1) can be expressed as shown below. The symbols refer to: socioeconomic resources (S); cognitive resources (I); family processes (P); school processes (T); acquired levels of youth education (A); motivational orientation (M); level of recurrent adult education (V); occupational achievement (O); and earnings (E). The symbols U and ε refer to unmeasured residuals. Other symbols used in subsequent paragraphs are raw correlation coefficients (r); structural coefficients (β); and the variance explained (R^2). Structural equations reproducing the resource conversion model (Figure 10.1) can be written as:

$$P = p_{ps}S + p_{pi}I + p_{pt}T + p_{p_a}U_a \qquad (11.1)$$

$$T = p_{ts}S + p_{ti}I + p_{tp}P + p_{t_b}U_b \qquad (11.2)$$

$$A = p_{as}S + p_{ai}I + p_{ap}P + p_{at}T + p_{a_c}U_c \qquad (11.3)$$

$$M = p_{ma}A + p_{m_d}U_d \qquad (11.4)$$

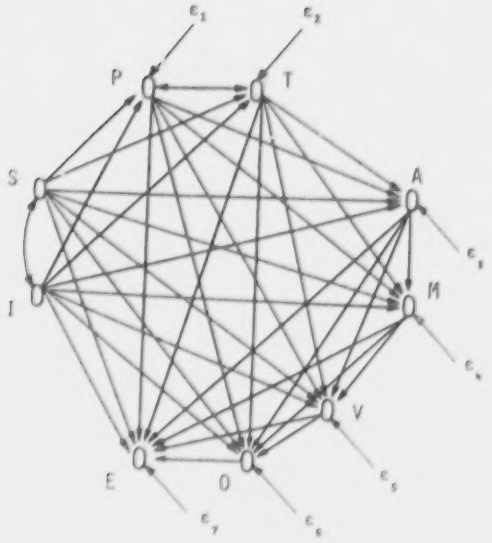
$$V = p_{va}A + p_{vm}M + p_{v_e}U_e \qquad (11.5)$$

$$O = p_{ov}V + p_{om}M + p_{oa}A + p_{o_f}U_f \qquad (11.6)$$

$$E = p_{eo}O + p_{ev}V + p_{ea}A + p_{e_g}U_g \qquad (11.7)$$

The equations present the algebraic equivalents of the causal relationships to be analyzed. Whereas the resource conversion model posits that P91=P92=P93=P94=P96=P81=P82=P83=P84=P71=P72=P73=P74=P61=P62=P63=P64=0, the full path diagram includes all possible relationships among variables. This full path diagram is presented in Figure 11.1. Symbols refer to SES 38 (S); IQ38 (I); PAEDATT (P); TEACHIQ (T); ACLEV (A); ASPED64 and ASPED71 (M); ADEC64, ACACUM71 and ACLAD (V); OCC58-80 (O); LOGINC58-80 (E). The error terms are indicated by the symbol ε.

Figure 11.1 The Full Path Diagram



The approach taken in this study is to compute the regression coefficients in three stages, using OLS as a standardized path solution. In the first stage the method of instrumental variables is used to provide estimates on the first four variables in the model. In the second stage OLS regression estimates are computed for the full path model. On the basis of significance criteria, the model is reduced to include only the significant relationships. In the final stage, OLS regression analysis is used to provide new estimates for the reduced model. Basic to the method used is the assumption that the residual variables or error terms are both uncorrelated with each other and with predetermined variables (Blalock, 1961; Duncan, 1975; Clifton, 1978; Tatsuoka, 1985). The coefficients of determination (R^2) can be computed with the formulas (Duncan, 1975: 64):

$$R^2 = \Sigma\, b_{ij} r_{ij} \qquad (11.8)$$

$$P_{i_a}{}^{U}{}_{a} = \sqrt{1 - R^2_{i\ \Sigma\, ij}} \qquad (11.9)$$

Principles for computing total path coefficients are discussed at length by several authors (Kerlinger et al., 1973; Duncan, 1975; Keeves, 1985). The decomposition of reduced form or total effect coefficients on a variable Y_3 of changes in variable X_2 typically take the form (Hanushek and Jackson, 1977: 227):

$$\begin{aligned} & B_{23} && \text{(direct effect } p_{23}\text{)} \\ & Y_{23}\, B_{22} && \text{(indirect effect due to change in } Y_2\text{)} \\ & Y_{13}\, B_{21} && \text{(indirect effect due to change in } Y_1\text{)} \\ + \quad & Y_{23}\, Y_{12}\, B_{21} && \text{(indirect effect due to change in } Y_2 \text{ caused by } Y_1\text{)} \\ \hline & T_{23} && \text{(total effect coefficient)} \end{aligned}$$

The model suggests an interdependent relationship between home (PAEDATT) respectively school processes (TEACHIQ). Alternative solutions to the problem of reciprocal causation appear in the literature. The first one is based on the panel data solution. This method is not applicable here because only one measure in time is available for the variables in question. A second way of dealing with the problem is to arbitrarily specify that the causation flows only in one direction. Also, on the assumption that the observed correlation between the variables for which in interdependent relationship is specified is attributable to a correlation between the unobserved variables or error terms, the theoretical relationship posited between the variables can safely be ignored. Various methods for estimating a reciprocal relationship are available: the two stage least squares (2SLS) and three stage least squares solution (3SLS); and the method of instrumental variables (IV). Since less complicated methods probably yield more interpretable results, the IV method will be used here. The method is discussed by Hauser (1972), Duncan (1975), Wonnacott et al. (1979), Lyttkens (1982), and Rogosa (1985). The solution allows for the estimation of a reciprocal effect by assuming that one of the predictor variables exerts an effect only indirectly on one endogenous variable so that instrumental variables and observed variables (except for one) constitute "natural" pairs. The regression model of constructs 3 and 4 on 1 and 2 (see Figure 10.1) reproduces the so-called two-wave, two-variable design which is most commonly used when investigating a reciprocal causal effect (Rogosa, 1985: 4223).

Duncan (1975) theoretically calculates that the inclusion into an interdependent relationship of a one-way path and treatment with OLS regression may cause a direct effect of one predictor on one outcome variable to become insignificant. On the basis of the results obtained by testing alternative model solutions with the OLS regression procedure, a reasonably safe inference can be made about which observed variable may be treated as an instrumental variable. The results obtained with OLS solutions for the model (X) using PAEDATT respectively for the model (Y) using TEACHIQ as the endogenous variable indicate that P32 (in model X) and P41 (in model Y) fail to meet significance. Since two instrumental variables are available, a linear combination of predictors can be used for estimation (Lyttkens, 1982). The substitution of an OLS standard error estimate for P32 and P41 to a test of significance which includes the empirical partial structural coefficients obtained for the interdependent causal model by means of the method of instrumental variables, yields the result that both P32 and P41 are insignificant and dropped (see Appendix 4.1). On the basis of the assumption that errors are uncorrelated and have a normal distribution, the variances explained and the residual in the interdependent variables can be estimated by introducing the observed correlations and the empirical partial regression coefficients into equations 11.8 and 11.9 (Lyttkens, 1982). Application of the basic theorem of path analysis to remaining just-identified equations provides that the problem of estimating a reciprocal causation between variables in a non-recursive system can be solved. This method allows for the empirical estimation of paths P31, P42, P34 and P43 by substituting known values into these equations (Duncan, 1975: 70-71: adapted from co-variance notation by Noonan, R.):

$$\beta_{31} = \frac{r_{13}r_{24} - r_{14}r_{23}}{r_{24} - r_{12}r_{14}} \qquad \beta_{42} = \frac{r_{14}r_{23} - r_{13}r_{24}}{r_{12}r_{23} - r_{13}} \qquad (11.10)$$

$$(11.11)$$

$$\beta_{34} = \frac{r_{23} - r_{12}r_{13}}{r_{24} - r_{12}r_{14}} \qquad \beta_{43} = \frac{r_{12}r_{24} - r_{14}}{r_{12}r_{23} - r_{13}} \qquad (11.12)$$

$$(11.13)$$

A few other issues need to be specified. With the exception of earnings data, the variables are standardized with a mean of 0 and a standard deviation of 1. When computing the correlation coefficients, missing values have been deleted "pairwise". The reduced form or total effect coefficients are, on the basis of an application of the basic theorem of path analysis, manually computed. In order to test the assumption of linearity between variables, t-statistics are computed. Failure to reject the 0 hypothesis follows the application of a critical value for t $\leq$ 2. (Duncan 1975). Kerlinger et al. (1973) suggest to regard a path with a coefficient below .05 as socially not meaningful. Path coefficients found to be statistically significant in the second stage of the OLS regression analysis are included when executing the third. Coefficients will not be reported unless values exceed .05. That is, although a path below .05 will not be displayed in any graph, its estimate is taken into account when computing total effects or reduced form coefficients and their corresponding R^2 statistics.

Another methodological concern relates to the longitudinal or time-specific order of the variables included in the model. A problem arises in case the order of variables specified is in apparent contradiction with the time-bound order. In the early career moment of analysis, for example, ASPED64 and ADEC64 are posited before OCC63 and LOGINC63. Though the years mentioned may suggest otherwise, there is no contradiction involved. The time notation (1964) associated with the variables ASPED64 and ADEC64 refers to the year in which a particular data gathering procedure was finalized. The coding of the variables made use of information provided by respondents in the period from 1962 to 1963. Whereas the variables ASPED, ADEC, ACACUM, and ACLAD are coded from questionnaires, and their time notation refers to the year in which the information was entered into the data bank, the earnings data have been provided by another source. LOGINC63 is a measure of a respondent's self-declared earnings over 1963. The only problem of longitudinality encountered in this study concerns ACLAD in a late career moment of analysis. The variable represents a measure of recurrent adult education attainment over the 1959-84 period. Because the last three of the twenty-five years the variable spans are outside the time-boundaries used for OCC80RX and LOGINC80, this particular part of the conversion model for late career poses a methodological problem. It is assumed, however, that this minor overlap will not significantly affect the direct, indirect and reduced form estimates obtained for the enduring causal effect of recurrent adult educational attainment on socioeconomic achievement.

Chapter 12.

FINDINGS

12.1 Introduction

This chapter presents and discusses the findings of the study. A complete matrix of correlation coefficients is presented in Appendix 2. The findings of an exploratory study using cross-tabulation are reported in Appendix 3. The results of the I.V. procedure and of the subsequent analysis using OLS regression as the standardized path solution for the 1958, 1963, 1971 and 1980 moments of analysis are reported in Appendix 4. Section 12.2 below presents the estimated path coefficients resulting from repeated OLS regressions on the four reduced path models. Section 12.3 deals with the decomposition of estimated reduced form or total effect coefficients. The total effect estimates are reported in Appendix 5. Section 12.3 also reviews the confirmed respectively rejected hypotheses. Section 12.4 attempts to interpret the empirical evidence generated by this study.

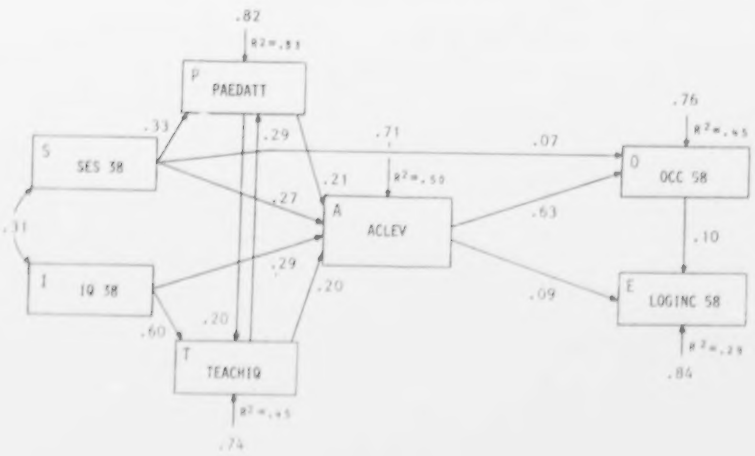
12.2 OLS Path Solutions for the Reduced Models

The results of the second OLS regression are reported for 1958 early career by Figure 12.1; for 1963 early career by Figure 12.2; for mid-career 1971 by Figure 12.3; and for late career 1980 by Figure 12.4. In the above-mentioned figures, a double-headed and rounded arrow indicates non-causal and unestimated relationships. Causal relationships are represented by single-headed arrows. In case two different single-headed arrows show between two variables a reciprocal causal relationship between those variables is indicated. Error terms are represented by small-sized arrows which appear to arrive from the outside of the models specified. The variance explained in the dependent variables is indicated by the R^2 statistic.

As can be seen from Figure 12.1, the 1958 model accounts for a third of the variance in PAEDATT (R^2 =.33); nearly half of the variance in TEACHIQ (R^2 =.45); and 50 percent of the variance in ACLEV. SES38 exerts a strong direct effect on PAEDATT (.33) and IQ38 on TEACHIQ (.60). The two-wave, two-variable solution using instrumental variables yields the result that SES38 has no direct effect on TEACHIQ and that IQ38 has no direct effect on PAEDATT. That is, path coefficients in question are smaller than twice their estimated standard errors. SES38 has, though, a weak indirect effect on TEACHIQ via PAEDATT (.07), and IQ38 a moderate indirect effect on PAEDATT via TEACHIQ (.17). SES38 and IQ38 have strong direct effects on ACLEV (.27 and .29 respectively). The moderate direct effects of PAEDATT and TEACHIQ

on ACLEV are about equal (.21 and .20 respectively). Added to these direct effects should be indirect effects (see Appendix 5.1). The indirect effect of SES38 on ACLEV is weak (.08) when compared to IQ38 (.15). PAEDATT exerts an unimportant indirect effect on ACLEV (.04). TEACHIQ appears to have a weak indirect effect on ACLEV (.06). These results are rather similar to the findings obtained with LISREL for an identical model by Furu (1985). A comparison of OLS and LISREL estimates for the model yields the following results: the direct effects of SES38 and IQ38 on ACLEV are .28 respectively .30 for LISREL and .27 and .29 for OLS. LISREL estimates for the direct effect of PAEDATT and TEACHIQ on ACLEV are .20 and .19 respectively, as against .21 and .20 for OLS. The estimated total effects of SES38 and IQ38 on TEACHIQ are .10 respectively .68 for LISREL as against .07 and .60 for the IV method. The total effects of SES38 and IQ38 on PAEDATT are .31 and .26 respectively for LISREL (Furu, 1985: 126) and .33 and .27 for the IV method applied here.

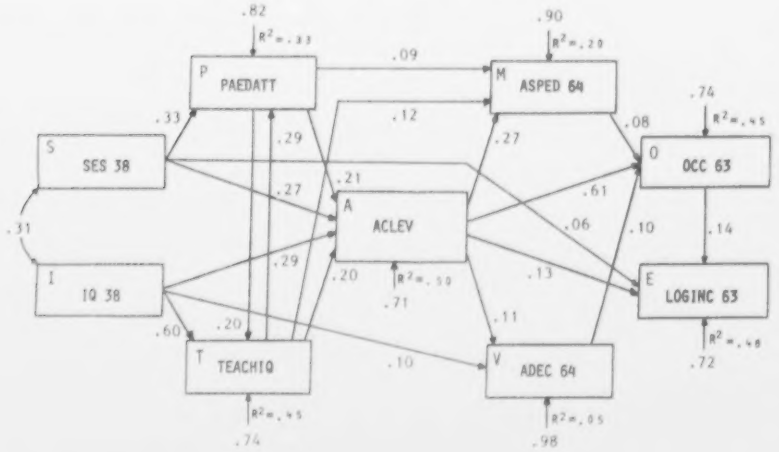
Figure 12.1 A Path Diagram Indicating Estimated Significant Direct Effect Coefficients for the Early Career (1958) Moment of Analysis.



In early career (1958), the resource conversion model explains nearly half of the variance in OCC58 (R^2 =.45) and less than a third of the variance in LOGINC58 (R^2 =.29). SES38 and ACLEV have a direct effect on OCC58 (.07 and .63 respectively). The total effect of SES38 and IQ38 on OCC58 is about similar (.29 and .28 respectively) as are the total effects of PAEDATT and TEACHIQ on OCC58 (.16 and .17 respectively). ACLEV and OCC58 have a weak direct effect on LOGINC58 (.09 and .10). The total effects of SES38 and IQ38 on LOGINC58 are weak whereas PAEDATT and TEACHIQ do not appear to have any importance. Total effect estimates for ACLEV and OCC58 on LOGINC58 are .15 and .10.

The early career 1963 model explains only a marginal amount of variance in ASPED64 (R^2 =.20). Variance explained in ADEC64 is negligible (R^2 =.05). Whereas PAEDATT and TEACHIQ exert direct moderate effects on ASPED64 (.09 and .12 respectively), ACLEV is a strong antecedent (.27). Both IQ38 and ACLEV have a weak direct effect on ADEC64, their total effects are moderate (.13 and .16; e.g. see Appendix 5.2).

Figure 12.2 A Path Diagram Indicating Estimated Significant Direct Effect Coefficients for the Early Career (1963) Moment of Analysis.

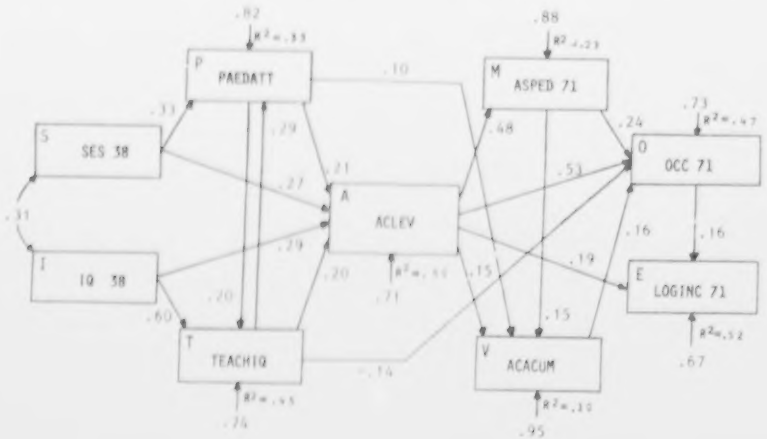


The 1963 model explains about equally much of the variance in OCC63 as the 1958 model did in OCC58 (R^2 =.45). Apart from the strong direct effect of ACLEV on OCC63 (.61), it can be seen from Figure 12.2 that ASPED64 and ADEC64 exert a weak although significant direct effect on OCC63 (.08 and .10 respectively). SES38 and IQ38 have a considerably strong effect on OCC63 (.24 and .30). PAEDATT and TEACHIQ exert a moderately strong effect on OCC63 (total effect coefficients .17 and .18 respectively). It can be seen from Figure 12.2 that the 1963 model explains nearly half of the variance in LOGINC63 (R^2 =.48). SES38 has a significant though weak direct effect on earnings (.06). Also, the direct effect of OCC63 on LOGINC63 increased when compared to the effect of OCC58 on LOGINC58 (.14 and .10 respectively). It is interesting to note that IQ38, PAEDATT, and ADEC64 have statistically significant though unimportant direct effects on LOGINC63. Whereas the direct effect of IQ38 is positive (.04), direct effects of PAEDATT and ADEC64 on LOGINC63 are negative (-.03 and -.04). Although these effects are too weak to be of social relevance, it could perhaps be the case that the minor indirect negative effect of ADEC64 on LOGINC63 lends some support, although as yet inconclusive, to the notion of earnings-foregone in connection to self-investment in further education and training. A decomposition of total effect coefficients for

model 1963 reveals that SES38 and IQ38 have about equally much importance for LOGINC63 (.14 and .13). Although the conversion model has not anticipated this, it can be seen from the Figure that some antecedents of ACLEV seem to have a direct effect on the post-ACLEV variables in the 1963 model: SES38 on LOGINC63; IQ38 on ADEC64; and PAEDATT and TEACHIQ on ASPED64. The paths are mostly weak or socially irrelevant. The only exception is the moderate effect of TEACHIQ on ASPED64 (.12). Attitudes to education would appear to be to a certain extent dependent on the social psychology of prior educational experiences.

As can be seen from Figure 12.3 below, the 1971 or mid career model accounts for about one-fourth of the variance in ASPED71 (R^2 =.23). The mid career model explains about ten percent of the variance in ACACUM71 (R^2 =.10).

Figure 12.3 A Path Diagram Indicating Estimated Significant Direct Effect Coefficients for Mid Career 1971 Moment of Analysis.



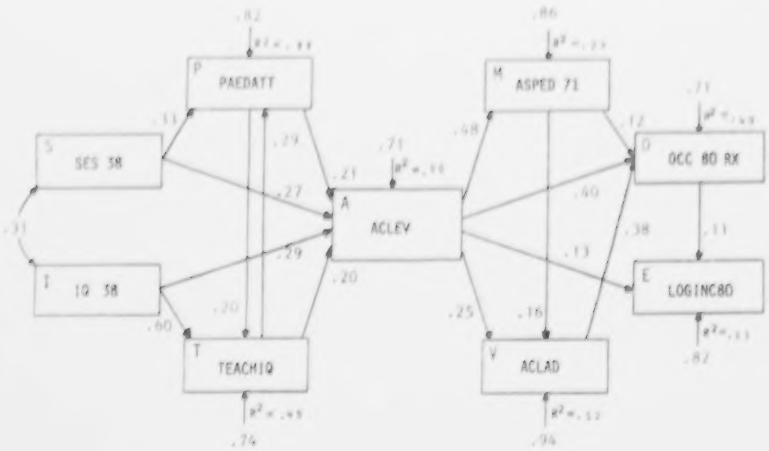
It is interesting to note that the direct paths from PAEDATT and TEACHIQ to ASPED have disappeared in the mid career model. Only ACLEV has a direct strong effect on ASPED71 (.48). Three variables exert direct effects on ACACUM71. These are PAEDATT (.10), ACLEV (.15) and ASPED71 (.15). A decomposition of total effect coefficients (see Appendix 5.3) indicates that ACLEV is the dominant predictor of ACACUM71 in the model (.22). PAEDATT and ASPED71 exert a significant direct effect on ACACUM71 (.15 each). The total effects on ACACUM by SES38 (.11); IQ38 (.11) and TEACHIQ (.09) are of minor social relevance.

Figure 12.3 shows that the 1971 model explains almost half of the variance in OCC71 (R^2 =.47) and even more than half of the

variance in mid career earnings (LOGINC71, R^2 =.52). The most important direct effect on OCC71 has ACLEV (.53). ASPED71 and ACACUM71 exert a moderate effect on OCC71 (.24 and .16). The breakdown of reduced form estimates (Appendix 5.3) shows that the total effect of ACLEV on OCC71 is overestimated. The total effect of IQ38 on OCC71 is greater than that of SES38 (.30 and .24 respectively). PAEDATT and TEACHIQ appear to have equally much relevance to OCC71 (.18 each). ACLEV has a moderate and slightly more important effect on LOGINC71 than OCC71 (.19 as against .16 resectively). The total effects of SES38 and IQ38 on LOGINC71 appear to be equal (.13 each). PAEDATT and TEACHIQ have weak effects on LOGINC71 (.08 both). ASPED71 and ACACUM71 have a socially unimportant effect on LOGINC71 as mediated by OCC71 (.04 and .03 respectively). Figure 12.3 shows that the mid career conversion model is "disturbed" by two direct paths which by-pass ACLEV. These run from PAEDATT to ACACUM71 (.10) and from TEACHIQ to OCC71 (-.14). It would seem therefore that parental educational encouragement has a moderate effect on an individual's likelihood, and extent, of participating in adult recurrent education about twenty to twenty-five years hence. A negative relationship between teacher's ratings of ability and actual occupational status attained twenty-five years later is rather difficult to explain.

As can be seen from Figure 12.4, the resource conversion model holds, with exception of the direct relationship between ACLAD and LOGINC80, for the late career moment of analysis. In 1980, about 12 percent of the variance in recurrent adult education attainment over a twenty-five year time-span is accounted for. The late career model explains nearly half of the variance in OCC80RX (R^2 =.49) and about a third in LOGINC80 (R^2 =.33).

Figure 12.4 A Path Diagram Indicating Estimated Significant Direct Effect Coefficients for the Late Career (1980) Moment of Analysis.



The late career resource conversion model indicates that ACLEV exerts a strong direct effect on ACLAD (.25) and ASPED71 has a moderate effect (.16). It can be seen from estimates presented in Appendix 5.4 that both SES38 and IQ38 exert moderate total effects on ACLAD as mediated by ACLEV and ASPED71 (.12 and .15 respectively). PAEDATT and TEACHIQ have weak effects on ACLAD (.09 and .08 respectively). It seems that ACLEV and ACLAD have an almost similar direct effect on OCC80RX (.40 and .38). Also SES38 and IQ38 exert a strong indirect effect on OCC80RX (.26 and .20). PAEDATT, TEACHIQ, and ASPED71 exert a moderate total effect on OCC80RX (.15, .15 and .19 respectively). The direct effect of ACLEV on LOGINC80 is comparatively small (.13). The direct effect of OCC80RX on LOGINC80 is less than the effect of OCC71 on LOGINC71 (.11 as against .16). IQ38 seems to have a statistically significant though socially unimportant direct effect on LOGINC80 (.05). Whereas SES38 appears to have a weak total effect on LOGINC80 (.07), the total effect of IQ38 seems to be moderate (.13). The variables TEACHIQ, PAEDATT, ASPED71 and ACLAD appear to have no relevance whatsoever for LOGINC80.

12.3 Confirmed Casu Quo Rejected Hypotheses

Table 12.2 presents an overview of the hypotheses which are on the basis of the findings of this study rejected or supported. Because many findings have been presented above, only a brief discussion of tested hypotheses will be forwarded here.

1. Acquired level of formal front-end education has a direct significant effect on motivational orientations in early, mid, and late career. The hypotheses are confirmed.

2. Acquired level of formal front-end education has a direct significant effect on recurrent adult education attainment in early, mid and late career. The hypotheses are confirmed.

3. Acquired level of formal front-end education has a direct significant effect on occupational achievement in early, mid and late career. The hypotheses are confirmed.

4. Acquired level of formal front-end education has a direct significant effect on earnings in early, mid and late career. The hypotheses are confirmed.

5. In early career, the measure of motivational orientation has no direct effect on recurrent adult education attainment. Hypothesis 5.1 is rejected. An explanation may be that, at the time the information was gathered, most respondents were about 30 years of age and their children, if any, were between 1 and 10 years old. The respondents may not have had motivated ambitions for their children's future educational career. ASPED71 has a direct effect on recurrent adult educational attainment in mid and late career. Hypotheses 5.2 and 5.3 are confirmed.

Table 12.1 Confirmed Casu Quo Rejected Hypotheses

R = hypothesis rejected C = hypothesis confirmed

No.	Description of Tested Hypothesis	Findings	
1.1	ACLEV direct effect on MO in Early Career	C	
1.2	ACLEV direct effect on MO in Mid Career	C	
1.3	ACLEV direct effect on MO in Late Career	C	
2.1	ACLEV direct effect on ADEC in Early Career	C	
2.2	ACLEV direct effect on ADEC in Mid Career	C	
2.3	ACLEV direct effect on ADEC in Late Career	C	
3.1	ACLEV direct effect on OCC in Early Career	C	
3.2	ACLEV direct effect on OCC in Mid Career	C	
3.3	ACLEV direct effect on OCC in Late Career	C	
4.1	ACLEV direct effect on INC in Early Career	C	
4.2	ACLEV direct effect on INC in Mid Career	C	
4.3	ACLEV direct effect on INC in Late Career	C	
5.1	MO direct effect on ADEC in Early Career		R
5.2	MO direct effect on ADEC in Mid Career	C	
5.3	MO direct effect on ADEC in Late Career	C	
6.1	MO direct effect on OCC in Early Career	C	
6.2	MO direct effect on OCC in Mid Career	C	
6.3	MO direct effect on OCC in Late Career	C	
7.1	MO indirect effect via ADEC and OCC on INC in EC		R
7.2	MO indirect effect via ADEC and OCC on INC in MC		R
7.3	MO indirect effect via ADEC and OCC on INC in LC		R
8.1	ADEC direct effect on OCC in Early Career	C	
8.2	ADEC direct effect on OCC in Mid Career	C	
8.3	ADEC direct effect on OCC in Late Career	C	
9.1	ADEC direct effect on INC in Early Career	I	
9.2	ADEC direct effect on INC in Mid Career		R
9.3	ADEC direct effect on INC in Late Career		R
10.1	OCC direct effect on INC in Early Career	C	
10.2	OCC direct effect on INC in Mid Career	C	
10.3	OCC direct effect on INC in Late Career	C	
11.1	Total effect ACLEV on OCC increases from EC to MC		R
11.2	Total effect ACLEV on OCC decreases from MC to LC		R
12.1	Total effect ADEC on OCC increases from EC to MC	C	
12.2	Total effect ADEC on OCC increases from MC to LC	C	
13.1	Total effect ACLEV on INC increases from EC to MC	C	
13.2	Total effect ACLEV on INC increases from MC to LC	C	
14.1	Total effect ADEC on INC increases from EC to MC		R
14.2	Total effect ADEC on INC increases from MC to LC		R

Paths below .05 are considered "socially not meaningful".

EC = Early Career MC = Mid Career LC = Late Career

I = Insufficient Information, inconclusive result

6. Motivational orientations have a direct significant effect on occupational achievement in early, mid and late career. The hypotheses are confirmed.

7. Motivational orientation has no socially and statistically significant direct, indirect, or total effect on earnings in either early, mid or late career. The hypotheses are rejected.

8. Recurrent adult educational attainment has a direct significant effect on occupational achievement in early, mid, and late career. The hypotheses are confirmed.

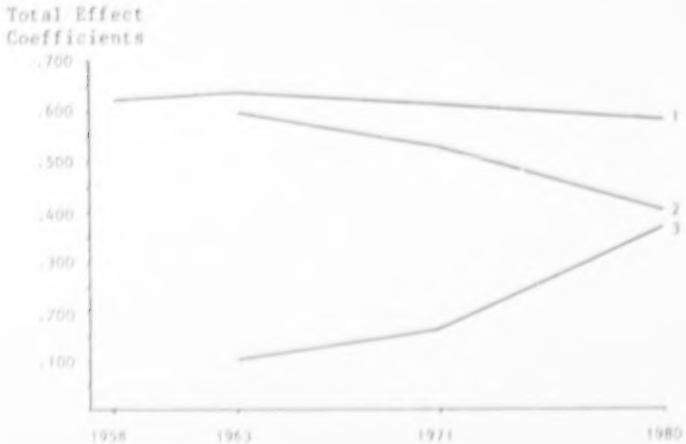
9. Recurrent adult educational attainment has a statistically significant negative direct effect on incomes in early career. The magnitude of the direct negative effect is considered too small to be socially meaningful (-.04). The indirect effect on earnings in early career is positive but irrelevant (.01). The hypothesis is neither rejected nor supported. Recurrent adult educational attainment neither has a direct effect on earnings in mid nor late career. Hypotheses 9.2 and 9.3 are rejected.

10. Occupational achievement has a direct significant effect on earnings in early, mid and late career. The hypotheses are confirmed.

11. As can be seen from Figure 12.5 below, the total effect of acquired level of front-end education on occupational achievement increases only marginally during the first phase or trial establishment period of early career and its impact appears to slightly decline from 1963 to late career. In addition, Figure 12.5 displays the direct effect of acquired level of front-end education on occupational achievement. It can be observed that this effect decreases considerably from early to late career. The total effects of recurrent adult educational attainment on occupational achievement seem to increase over time. The path models for early, mid and late career (Figures 12.2, 12.3 and 12.4) suggest that acquired level of front-end education seems to influence recurrent adult educational attainment. While the direct effect of acquired level of formal front-end education on occupational success decreases from mid to late career, its indirect effect via adult educational attainment increases. It would appear, therefore, that the net impact of acquired level of front-end education on occupational success is more stable across the life-span than has initially been assumed. That is, the stabilization of the total effect of front-end educational attainment on occupational status seems to partially depend on the gradual increases in the direct effect of recurrent adult educational attainment on occupational achievement.

Since only 10 to 12 percent of the variance in recurrent adult educational attainment is explained, recurrent adult education attainment appears to exert an effect on occupational success independently of acquired level of front-end education. Recurrent adult education, by functioning as a mediator of acquired level of front-end schooling, appears to reinforce and augment the otherwise declining direct effect of level of schooling on occupational achievement. Therefore, and perhaps surprisingly, hypothesis 11.1 and 11.2 are rejected.

Figure 12.5 The Total Effect of Acquired Level of Front-end Education and Recurrent Adult Education Attainment on Occupational Achievement in Early, Mid, and Late Career Dimensions of the Life-span.



1 = Total effect of youth or front-end educational attainment on occupational achievement in 1958, 1963, 1971 and 1980.

2 = Direct effect of youth or front-end educational attainment on occupational achievement in 1963, 1971 and 1980.

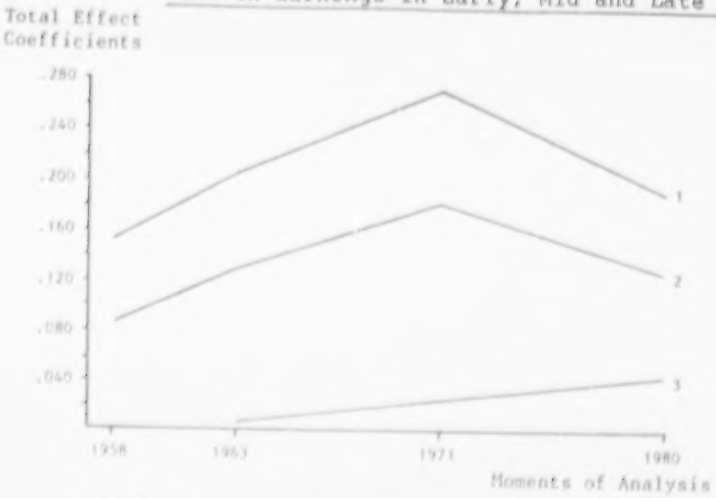
3 = Total effect of recurrent adult educational attainment on occupational achievement in 1963, 1971 and 1980.

12. The direct and total effects of recurrent adult education attainment are identical. Figure 12.5 shows that total effects of recurrent adult educational attainment on occupational success increase over time. The hypotheses are confirmed.

13. It can be seen from Figure 12.6 that the total effect of front-end education on earnings increase until mid career and decline thereafter. The hypotheses are confirmed.

14. Recurrent adult educational attainment does not exert a socially significant direct effect on earnings in early, mid and late career. It must be noted, however, that a very minor statistically significant though socially irrelevant negative direct effect was established from recurrent adult educational attainment to earnings in early career (-.04). Also, although the corresponding t statistic remained just below its critical value (1.94), the structural coefficient found for the direct path from recurrent adult educational attainment to mid career earnings (see Appendix 4.3) appeared to be negative (-.02). As indicated by Figure 12.6, the curve depicting the total effect of recurrent adult educational attainment on earnings augments from early to late career. However, it is important to observe that the total effect coefficients do not exceed the .05 level (socially insignificant). Thus, the hypotheses are rejected.

Figure 12.6. The Total Effect of Acquired Level of Front-end Education and Recurrent Adult Education Attainment on Earnings in Early, Mid and Late Career.



1 = Total effect of acquired level of youth or front-end education on earnings in 1958, 1963, 1971 and 1980.

2 = Direct effect of acquired level of youth or front-end education on earnings in 1958, 1963, 1971 and 1980.

3 = Total effect of recurrent adult educational attainment on earnings in 1963, 1971 and 1980.

Another issue relates to the total effects of the early childhood antecedents on occupational achievement and earnings in early, mid and late career moments of analysis as mediated by acquired level of front-end education and recurrent adult educational attainment. Figure 12.7 presents the total effects of socioeconomic resources of the home, early cognitive ability, and home and school processes, on occupational achievement. It can be seen that the total effects of early cognitive ability on occupational achievement slightly augment during the trial establishment period, then level, and decrease thereafter. It is interesting to see that early cognitive ability seems to be equally important for occupational success during the initial and final phases of the career cycle. Socioeconomic status of the home exerts maximum effects on occupational success at the beginning of early career. Although its significance decreases thereafter, family of origin remains an important determinant of occupational achievement throughout life. Cognitive ability seems to be about equally relevant to determining the level of entry into the employment hierarchy as resources of the home. Estimates of the importance of the home would be higher if the impact of family resources on ability had been accounted for. The relative differences between effects of family background and ability on occupational success tend to remain stable from mid to late career. Figure 12.7 suggests that home and school processes indeed to some extent affect occupational careers.

Figure 12.7 Effects of Early Childhood Antecedents on Occupational Success in Early, Mid and Late Career.

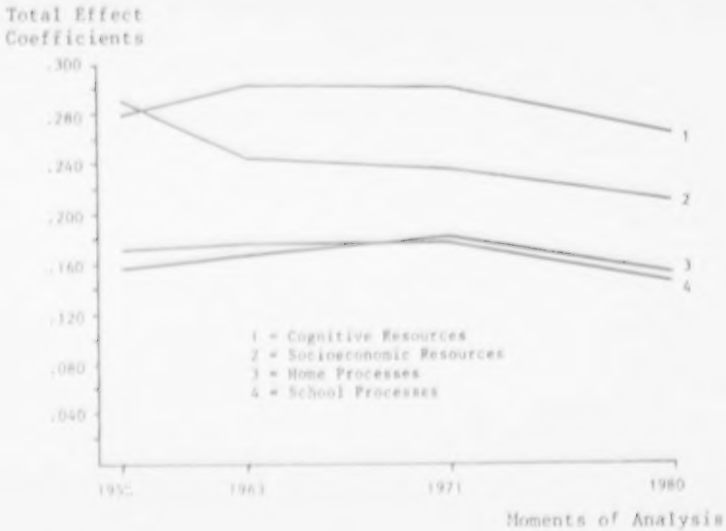


Figure 12.8 shows the estimated total effects of early childhood antecedents on earnings in early, mid and late career. It appears that school and home processes exert insignificant to weak total effects on earnings. The importance of resources of the family of origin for earnings augments considerably during the trial establishment period of the career cycle. Importance of the home as a determinant of earnings appears to be stable during mid-career. The direct reproduction effect of the home of origin appears to decrease only after the age of about 42. The significance of cognitive ability as measured during early childhood for earnings appears to double during the five years of early trial establishment. After a significance plateau has been reached by the age of about 35, the importance of ability for earnings seems to remain fairly stable across mid and late career phases of the life-span. When interpreting Figure 12.8, the reader is reminded that the impact of family resources on cognitive ability has not been incorporated in the results.

Figure 12.9 presents the variance explained by the path models in recurrent adult educational attainment, occupational achievemet and earnings. The decrease in the variance explained by the late career model in earnings is largely attributable to a weakening of the direct effect of occupational status in 1980. The sequence of direct effect estimates (Figures 12.1 to 12.4) of the relationship between occupational success and earnings indicates that the direct effects of occupational achievement on earnings decrease during the 1970s. The influence of macro-level redistributive economic policy on earnings differentials between various status groups in Swedish society may, perhaps, partly account for the drop observed for variance in earnings.

Figure 12.8 The total Effects of Early Childhood Antecedents on Earnings in Early, Mid and Late Career.

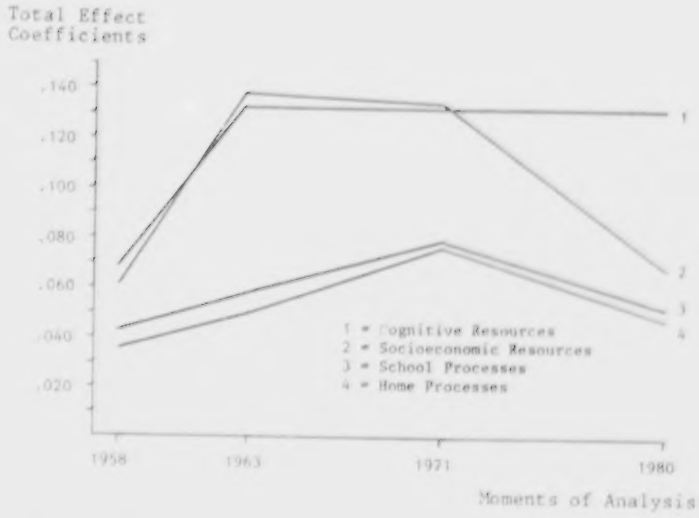
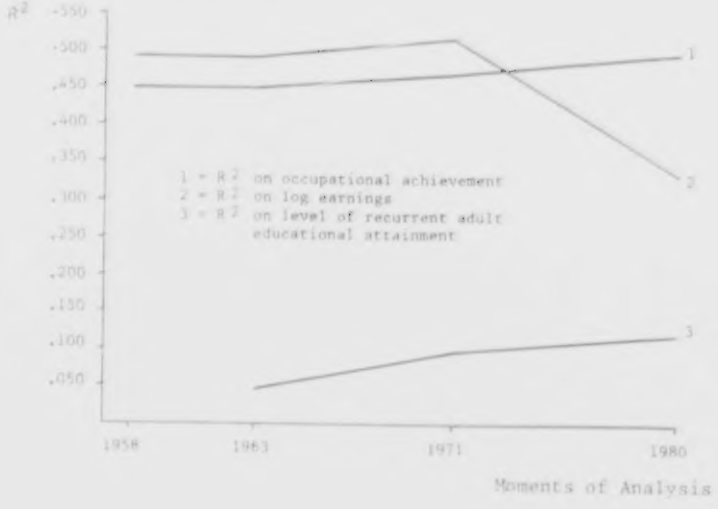


Figure 12.9 Change over Time in Variance Explained (R^2) by the Resource Conversion Models in Occupational Achievement (1), Log Earnings (2) and Recurrent Adult Educational Attainment (3) at age 30, 35, 42 and 52.



DISCUSSION

This study constitutes an attempt to empirically estimate the relative importance of various early childhood antecedents as predictors of acquired level of schooling and recurrent adult educational attainment. It is also attempted to estimate the strengths of the effects of front-end schooling and recurrent adult educational attainment on subsequent occupational achievement and earnings. The data set utilized is derived from the still active 45-year old Malmö Longitudinal Study.

The resource conversion model investigated begins with static indicators of the socioeconomic status of the family of origin and early cognitive ability, and unfolds via indicators of the socialization process taking place in the home and the school, formal schooling, motivational orientations, recurrent adult education, and concludes with the socioeconomic career cycle.

The resource conversion models tested explain about 50 percent of the variance in acquired level of front-end schooling. The variance explained in recurrent adult educational attainment is 5 percent at age 35; 10 at age 42 and 12 percent at age 52. The models explain 45 percent of the variance in occupational achievement at age 30, 45 percent at age 35; 47 percent at age 42; and 49 percent at age 52. The specific resource conversion models tested in this study explain 29 percent of the variance in earnings at age 30; 48 percent at age 35; 52 percent at age 42; and 33 percent at the age of 52.

The results arrived at seem to lend support to the thesis that acquired level of schooling directly influences occupational achievement and earnings. Significant direct paths are found between front-end schooling, occupational success and earnings at all moments of the socioeconomic career cycle investigated. Findings generated by the present study support the conclusion reached by others that the direct effects of acquired level of front-end schooling on occupational achievement and earnings are not stable but vary considerably depending on the stage of the socioeconomic career cycle considered. Evidence generated by previous longitudinal research suggests that direct effects of acquired level of front-end schooling on socioeconomic success augment during the early to mid-life phases of the career cycle. Theoretically, the literature suggests that the impact of formal schooling on socioeconomic achievement will decrease in strength later on in the career cycle. Results obtained by the present study confirm the findings of previous research in that the direct effects of acquired level of front-end schooling increase from the age of 30 to 42. Also, the magnitude of the direct effect of schooling on occupational achievement and earnings is found to decrease from the age of 42 to 52.

In the past two decades there has been an explosion of studies on the role of education in the socioeconomic career cycle. As the review in Sections 10.3 and 10.4 indicates, however, most

of these studies have been flawed by limitations arising from the use of a non-longitudinal data set, and more importantly, by the narrow way in which educational attainment is defined.

Considering the results of the present study, the conclusion that the total effect of acquired level of front-end schooling on occupational achievement and earnings decreases from around the age of 40 and onwards, is only partly endorsed. In case an educational attainment indicator is included into the model to accomodate the recurring events of participation in recurrent adult education programs, it appears that the indirect effect from front-end schooling to occupational success via recurrent adult educational attainment is sufficiently powerful in both the mid and late career moments of analysis to entirely stabilize the otherwise declining effect of front-end schooling on occupational achievement. In other words, the total effect of acquired level of front-end schooling on occupational achievement as mediated by recurrent adult education attainment seems to be stable from around the age of 35 to 52. Recurrent adult educational attainment appears to have no significant effects on earnings. The conclusion that the total effect of acquired level of schooling on earnings augments during initial stages of the career cycle and then decreases from mid to late career is supported by the findings of the present study.

This study lends some support to the assumption that recurrent adult education may function as an additional or "second" road to occupational mobility. Considerable effect coefficients are found for the path from recurrent adult educational attainment to occupational status in mid and late career. Because only a small part of the variance in adult education is explained by the models, recurrent adult education appears to operate to a considerable degree independent of acquired level of front-end or youth education. The data indicate that, in the conversion model tested, acquired level of front-end schooling functions as the single most significant determinant of recurrent adult educational attainment across the life-span. Nevertheless, the findings do not support the rather "simplistic" assumptions of the type "those who already have will receive more". The total effect of recurrent adult education attainment on occupational success appears to increase significantly from age 35 to 52.

With regard to the important question whether or not recurrent adult education may have an equalizing effect on the distribution of economic resources in society, the findings generated by the present study are not supportive. Though the magnitudes of the total effects of recurrent adult educational attainment on occupational achievement in mid and late career may suggest otherwise, the estimated total effects of recurrent adult education on earnings are socially insignificant. One explanation for this phenomenon may relate to the overall weakness of the direct effect coefficient found for the observed relationship between occupational status and earnings. The non-existence of strong relationships between occupational success and earnings could, perhaps, partly be accounted for by the degree to which the various interest groups in Sweden adhere to the resolve to intervene in the process of redistributing economic surplus in an attempt to create a more equal society.

If recurrent adult education apparently does not significantly affect the earnings differentials between non-participants and participants in either competence or credential related adult education programs, participation in the latter categories of recurrent adult education nevertheless seems to confer skills relevant to the acquisition of jobs with a higher prestige and responsibility level. It may be assumed that one major outcome of recurrent adult education is to positively affect the self-perceived quality of working life. Another partial explanation for the observed lack of direct links between recurrent adult education and subsequent earnings may be that, in contemporary Sweden, employers may sponsor the participation of workers in prestigeous recurrent education programs in order to allocate complementary rewards with an economic value in itself.

Future research on the enduring effects of recurrent education may, apart from socioeconomic indicators of the type employed here, incorporate social psychological measures of subjective well-being into the research design. Indicators of alternative criterion variables could, for instance, be measures of career or job satisfaction, self-perceived success in life, or other indicators assumed to have a bearing on the "quality of life". Fortunately, good quality data useful for the construction of composite "quality of life" indicators have been collected for the Malmö Study since 1963. Accordingly, the recently updated data bank contains information sufficient for the building of a longitudinally ordered set of "quality of life" variables.

More powerful tools for causal prediction and theory building than those employed in the present study have become available over the past decade. Future research on the enduring effects of recurrent education may attempt to test and estimate alternative resource conversion models by means of a more advanced analytical technique such as, for example, LISREL or PLS.

The empirical analysis of the present study builds on the male part of the respondents of the Malmö Study. The data comprise a single age cohort born in Malmö city around 1938. This city, which is the third largest in Sweden, is located in the midst of a highly industrialized urban region. The findings reported here may, therefore, also be relevant to other industrialized western societies. The information used in this study relates to reform work in Swedish recurrent adult education from about 1960 to the early 1980s. The recurrent adult education sector expanded rapidly during the 1960s and 1970s. Most respondents in the Malmö Study were 32 years old in 1960. Hence, they may not have had an optimal opportunity to participate in programs when compared to their younger counterparts. As a consequence, it seems important to study the effects of recurrent education on social psychological and socioeconomic indicators with the help of longitudinal data collected for later birth cohorts.

If reduced form estimates could be obtained for the effects of recurrent adult education on socioeconomic achievement across the life-span on the basis of data collected in other advanced western societies with well-developed adult education sectors, a rough comparison of developmental trends regarding enduring effects of recurrent education could possibly be made.

APPENDICES

LINE	CATEG.	A*	B*	X*	Y*	CATEG.	A*	B*	X*	Y*	CATEG.	A*	B*	X*	Y*
1	0	000	000	99	99	8	125	125	28	28	10	443	334	55	51
2	1	*00	*00	98	98	8	512	512	29	29	10	344	433	56	52
3	1	0*0	0*0	97	97	8	223	224	24	30	11	235	245	49	53
4	2	**0	**0	96	96	8	322	422	25	31	11	532	542	50	54
5	-	---	---	--	--	8	143	134	32	32	11	433	344	51	55
6	3	111	111	10	10	8	341	431	33	33	11	334	443	52	56
7	4	112	112	11	11	8	244	233	45	34	11	155	155	57	57
8	5	114	113	15	12	8	442	332	46	35	11	551	551	58	58
9	5	411	311	16	13	9	133	144	26	36	11	445	335	66	59
10	5	122	122	14	14	9	331	441	27	37	11	544	533	67	60
11	6	113	114	12	15	9	225	225	38	38	12	333	444	44	61
12	6	311	411	13	16	9	522	522	39	39	12	345	345	62	62
13	6	222	222	17	17	9	243	234	40	40	12	543	543	63	63
14	6	124	123	20	18	9	342	432	41	41	12	255	255	64	64
15	6	421	321	21	19	9	145	135	47	42	12	552	552	65	65
16	7	123	124	18	20	9	541	531	48	43	13	335	445	59	66
17	7	321	421	19	21	9	444	333	61	44	13	533	544	60	67
18	7	115	115	22	22	10	233	244	34	45	13	455	355	70	68
19	7	511	511	23	23	10	332	442	35	46	13	554	553	71	69
20	7	224	223	30	24	10	135	145	42	47	14	355	455	68	70
21	7	422	322	31	25	10	531	541	43	48	14	553	554	69	71
22	7	144	133	36	26	10	245	235	53	49	15	555	555	72	72
23	7	441	331	37	27	10	542	532	54	50	--	---	---	--	--

Note) A: this column presents a three digit composite index for ACLAD. Digit 1=scores ADEC64; digit 2=scores ADEC71; digit 3=scores ADEC84. Category numbers are the sum of the three digits. Categories are used for classification. Column A in an index for the GENERAL-LEISURE/JOB-CAREER version of ACLAD. Column B is an index for NONCREDENTIAL/CREDENTIAL version of ACLAD (=ACLADUC). Column X presents codes corresponding to combinations of A; Column Y corresponds to B. Example: Line 23, column B: 532=CREDJOB in 1964; NONCREDJOB in 1971; and NONCREDGEN in 84. No.532=code10.

		X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}	X_{19}	X_{20}	X_{21}	X_{22}	X_{23}	X_{24}	X_{25}
X_1	SES38		.305	.414	.263	.496	.281	.201	.375	.271	.249	.141	.359	.409	.383	.267	.172	.153	.350	.391	.294	.208	.215	.328	.339	.276
X_2	IQ38	791		.306	.654	.563	.259	.183	.340	.296	.317	.168	.371	.406	.381	.320	.238	.207	.346	.394	.363	.239	.237	.349	.380	.375
X_3	PAEDATT	558	583		.318	.474	.285	.072	.341	.217	.281	.153	.348	.266	.323	.284	.250	.215	.339	.310	.253	.114	.227	.305	.331	.242
X_4	TEACHIQ	726	765	539		.523	.266	.123	.302	.263	.331	.114	.325	.325	.301	.297	.263	.211	.248	.337	.335	.203	.232	.319	.342	.324
X_5	ACLEV	720	755	583	692		.506	.339	.644	.481	.415	.201	.661	.620	.645	.482	.330	.266	.620	.658	.522	.237	.323	.582	.615	.523
X_6	OCC53	539	562	544	517	562		.318	.710	.418	.254	.140	.591	.619	.431	.365	.222	.159	.484	.422	.368	.180	.208	.382	.469	.352
X_7	LOGINC53	305	312	245	288	301	246		.340	.569	.092	.114	.286	.506	.309	.092	.109	.162	.296	.289	.169	.138	.148	.287	.246	.160
X_8	OCC58	563	588	570	543	588	561	250		.497	.326	.178	.792	.583	.577	.440	.248	.205	.640	.566	.461	.186	.261	.478	.517	.478
X_9	LOGINC58	455	468	362	423	467	359	286	368		.167	.145	.467	.726	.604	.286	.217	.158	.478	.550	.469	.219	.247	.610	.402	.457
X_{10}	ASPED64	374	389	381	365	389	363	171	385	250		.123	.341	.285	.296	.456	.115	.115	.329	.330	.206	.123	.159	.274	.315	.226
X_{11}	ADEC64	549	573	555	529	573	536	243	560	357	369		.236	.076	.155	.212	.399	.805	.245	.155	.174	.355	.773	.372	.401	.155
X_{12}	OCC63	565	589	571	544	589	560	249	586	369	384	561		.602	.606	.439	.334	.297	.672	.578	.441	.245	.336	.589	.603	.429
X_{13}	LOGINC63	599	629	524	574	609	508	283	531	420	356	513	533		.771	.355	.170	.105	.584	.737	.590	.216	.197	.529	.548	.607
X_{14}	LOGINC68	598	630	498	578	596	488	277	508	405	336	492	508	547		.351	.307	.200	.624	.847	.694	.311	.315	.586	.597	.680
X_{15}	ASPED71	370	389	344	358	375	332	158	347	231	267	337	367	343	335		.235	.245	.493	.397	.319	.239	.277	.422	.476	.320
X_{16}	ADEC71	547	571	485	520	547	470	245	492	254	329	479	492	492	488	386		.762	.414	.300	.308	.447	.826	.452	.485	.252
X_{17}	ACACUM	459	479	463	439	479	469	213	469	300	313	479	469	434	421	336	479		.332	.192	.220	.410	.891	.460	.463	.192
X_{18}	OCC71	544	568	479	518	544	466	244	486	354	329	473	486	491	487	386	561	471		.631	.510	.336	.427	.676	.728	.519
X_{19}	LOGINC71	674	705	551	648	665	534	296	559	434	370	561	559	599	604	375	539	462	539		.764	.298	.290	.560	.601	.733
X_{20}	LOGINC78	659	693	537	636	650	520	285	545	429	360	527	544	582	590	360	533	453	530	657		.309	.328	.473	.552	.869
X_{21}	ADEC84	529	556	453	507	522	438	237	456	337	303	438	455	459	467	309	453	396	454	518	513		.697	.460	.522	.307
X_{22}	ACLAD	559	585	528	533	572	511	250	535	365	354	521	534	513	509	368	538	479	531	558	549	500		.545	.586	.275
X_{23}	OCCBORK	525	551	449	503	518	434	237	452	339	300	434	452	458	467	310	453	394	454	517	513	565	496		1.000	.479
X_{24}	OCCADSZ	609	641	508	584	599	492	266	516	392	345	498	516	533	542	370	545	459	543	600	590	529	561	532		.544
X_{25}	LOGINC80	649	682	523	628	632	504	279	530	414	346	510	529	563	576	351	514	441	513	662	657	517	536	514	580	

Zero Order correlation coefficients are above the diagonal, the case bases below. Underlined coefficients are not statistically significant at the .01 level. With exception of the LOGINC variables, all variables are standardized with mean 0 and S.D. 1. For a key to the mnemonics used, the reader is referred to Table 11.1 and Table 11.3.

APPENDIX THREE

The present Appendix presents the results of various cross-tabulations between pairs of variables throught to be of primary interest to the reader. These cross-tabulations have been included because they will facilitate the interpretation of the findings of this study.

AP 3.1 Cross-tabulation between Acquired level of Front-end Education (ACLEV) and Occupational Achievement in Late Career (OCC80RX). In percent and proportion of sub-groups. N missing = 316. Rounding errors may have occurred.

	Acquired level of Front-end Education (ACLEV)					
OCC80RX	Folkskola unfinished	Folkskola finished	Folkskola and vocat	Realskola	Matric. exams.	Univers.
Unskilled Worker	2	14	5	-	-	-
Skilled Worker	1	7	7	1	-	-
Lower White Collar	2	6	5	3	1	-
Middle White Collar	1	5	10	6	3	1
Upper White Collar	-	1	3	4	5	5
Entrepreneurs	-	1	1	1	1	-
Total Percent (102*)	6	34	31	15	10	6
N of Cases	28	175	157	76	52	30

AP 3.2 Cross-tabulation between Recurrent Adult Educational Attainment in the 1959-1984 interval (ACLADUC or ACLAD collapsed) and the measure of Occupational Achievement in Late Career (OCC80RX). In percent and proportion of sub-groups. N missing = 338. Rounding errors may have occurred. For ACLADUC, see Chapter 12.2.

	Acquired level of Adult Education 1959-84 (ACLADUC/ACLAD)							
	NONPAR	LOWPAR-	LOWPAR+	MEDPAR-	MEDPAR+	HIGPAR-	HIGPAR+	N
Unskilled Worker	10.3	7.3	1.4	0.8	0.6	0.2	0.0	103
Skilled Worker	3.4	6.7	2.2	2.0	0.8	0.2	0.4	80
Lower White Collar	3.2	4.6	4.0	1.2	3.2	0.6	0.2	85
Middle White Collar	0.6	4.8	4.2	1.9	7.3	3.0	3.6	126
Upper White Collar	0.4	2.8	1.6	1.2	2.4	4.0	5.0	87
Entrepreneurs	0.6	1.0	0.2	0.0	0.4	0.4	0.4	15
Total Percent (101*)	19	27	14	8	15	8	10	101
N of Cases	94	136	68	35	73	42	48	496

AP 3.3

ACLEV	Socioeconomic Status 1938 (SES38)				
	Unskilled	Skilled	Middle	Upper	N
Folkskola Discont	6,0	2,6	1,0	0,0	69
Folkskola	16,8	14,5	4,6	0,7	264
Folkskola + Vocat	8,9	9,7	6,7	1,1	190
Realskola	1,7	4,3	4,2	2,2	89
Matriculation	1,7	3,3	2,1	1,8	64
University	0,1	0,8	0,7	4,4	44
Total Percent	35,1	35,4	19,2	10,3	100
Total N	253	255	138	74	720

AP 3.4

ACLAD / ACLADUC	Socioeconomic Status 1938 (SES38)				
	Unskilled	Skilled	Middle	Upper	N
Non Participation	9,7	8,2	2,7	1,6	125
Low Par Minus	10,0	7,9	4,8	2,2	139
Low Par Plus	3,2	6,1	2,5	2,0	77
Medium Par Minus	2,5	1,8	1,8	3,4	36
Medium Par Plus	2,9	5,7	4,3	2,2	83
High Par Minus	1,3	3,0	2,2	1,6	45
High Par Plus	2,0	3,6	2,7	1,4	54
Total Percent	31,3	36,3	21,1	11,3	100
Total N	175	203	118	63	559

AP 3.5

OCCBORX	Socioeconomic Status 1938 (SES38)				
	Unskilled	Skilled	Middle	Upper	N
Unskilled Worker	10,3	7,2	2,9	0,4	109
Skilled Worker	8,0	5,1	3,9	0,2	90
Lower White Collar	6,3	5,9	2,4	1,9	87
Middle White Collar	4,6	10,3	7,6	2,7	132
Upper White Collar	2,9	5,9	3,4	5,0	90
Entrepreneurs	1,0	1,1	0,6	0,6	17
Total Percent	33,0	35,6	20,8	10,7	100
Total N	173	187	109	56	525

AP 3.6

ACLEV	Cognitive Ability 1938 (IQ38) Weak	Mean-	Mean	Mean+	Gifted	* Rounding Errors N
Folkskola Discontinued	6.2	1.2	0.9	0.1	0.0	63
Folkskola	12.6	6.1	14.7	2.6	1.9	280
Folkskola and Vocation	4.1	3.4	11.3	4.6	3.0	195
Realskola	0.5	1.2	5.3	2.3	3.1	92
Matriculation Exam	0.3	0.1	3.6	2.0	2.7	65
University	0.4	0.1	1.2	1.6	2.8	46
Total Percent	24.0	12.2	37.1	13.2	13.5	*100
Total N	178	90	275	98	100	741

AP 3.7

ACLAD / ACLADUC	Cognitive Ability 1938 (IQ38) Weak	Mean-	Mean	Mean+	Gifted	* Rounding Errors N
Non Participation	8.1	3.1	7.7	2.6	1.4	133
Low Par Minus	4.8	2.7	9.6	3.4	4.1	144
Low Par Plus	2.2	1.5	5.3	2.1	2.7	81
Medium Par Minus	0.9	1.0	2.6	1.5	0.5	38
Medium Par High	1.7	2.1	5.8	2.6	2.2	84
High Par Minus	0.5	0.5	3.6	1.4	2.3	48
High Par Plus	1.4	0.7	3.3	1.5	2.6	55
Total Percent	19.6	11.7	37.9	15.1	15.8	*100
Total N	114	68	221	88	92	583

AP 3.8

OCC80RX	Cognitive Ability 1938 (IQ38) Weak	Mean-	Mean	Mean+	Gifted	*Rounding Errors N
Unskilled Worker	7.1	3.5	6.8	2.2	1.3	114
Skilled Worker	4.2	2.9	7.1	1.7	1.3	94
Lower White Collar	2.4	2.6	7.5	2.4	2.4	94
Middle White Collar	3.7	2.2	9.5	5.1	4.2	135
Upper White Collar	0.9	1.1	5.7	3.3	5.9	92
Entrepreneurs	0.4	0.2	1.5	0.6	0.7	18
Total Percent	18.7	12.4	38.0	15.2	15.7	*100
Total N	102	68	208	83	86	547

AP 3.9

ACLEV	Teacher' Rating of Intelligence 1938 (TEACHIQ)					
	Weak	Mean -	Mean	Mean +	Gifted	N
Folkskola Biscontin	6,5	1,9	1,6	0,0	0,0	69
Folkskola	6,7	10,0	14,6	3,5	1,9	253
Folkskola and Vocat	2,9	4,8	11,7	4,7	2,5	184
Realskola	0,4	1,2	5,1	2,5	3,0	84
Matriculation Exam	0,1	0,1	2,8	3,2	2,5	60
University	0,0	0,3	1,6	2,2	2,0	42
Total Percent	16,6	18,2	37,3	16,0	11,9	100
Total N	115	126	258	111	82	692

AP 3.10

ACLAD / ACLADUC	Teacher' Rating of Intelligence 1938 (TEACHIQ)					
	Weak	Mean -	Mean	Mean +	Gifted	N
Non Participation	4,5	6,0	9,0	2,1	1,9	125
Low Par Minus	2,8	4,7	9,0	3,8	3,4	126
Low Par Plus	1,7	1,9	5,6	2,4	2,4	75
Medium Par Minus	1,1	6,9	2,3	1,5	0,6	34
Medium Par Plus	1,5	2,1	6,6	3,6	1,5	81
High Par Minus	0,2	0,8	3,6	2,3	1,9	46
High Par Plus	0,2	1,1	1,9	3,0	2,4	46
Total Percent	12,0	17,5	38,0	18,6	14,1	100
Total N	64	93	202	99	75	533

AP 3.11

OCC40RX	Teacher' Rating of Intelligence 1938 (TEACHIQ)					
	Weak	Mean -	Mean	Mean +	Gifted	N
Unskilled Worker	5,0	4,4	9,5	1,2	1,2	107
Skilled Worker	2,8	4,4	6,8	2,4	1,0	87
Lower White Collar	1,8	4,0	5,0	3,2	3,0	90
Middle White Collar	2,4	3,0	10,3	5,0	3,4	121
Higher White Collar	0,4	1,6	5,6	4,4	4,0	80
Entrepreneurs	0,0	0,8	1,0	1,2	0,6	18
Total Percent	12,3	18,1	39,2	17,3	13,1	100
Total N	62	91	197	87	66	503

AP 3.12 Acquired Level of Adult Education, 1959-1964 (ADEC64)

OCCWORK	Non Par	Non Cred general	Non Cred career	Cred Par general	Cred Par career	N
Unskilled Worker	14,3	2,8	1,4	0,2	0,2	82
Skilled Worker	9,0	2,1	2,3	1,2	1,2	69
Lower White Collar	8,8	2,1	4,6	0,9	0,9	74
Middle White Collar	9,9	3,0	7,1	0,9	5,3	114
Upper White Collar	4,8	1,4	3,9	1,8	6,7	81
Entrepreneurs	1,6	0,5	0,0	0,2	0,9	14
Total Percent	48,4	11,5	19,4	5,3	15,4	100
Total N	210	50	84	23	67	434

AP 3.13 Acquired Level of Adult Education, 1964-1971 (ADEC71)

OCCWORK	Non Par	Non Cred general	Non Cred career	Cred Par general	Cred Par career	N
Unskilled Worker	15,0	2,2	2,0	0,2	0,2	89
Skilled Worker	7,5	4,2	2,7	0,4	0,4	69
Lower White Collar	8,8	1,3	5,1	0,7	1,6	79
Middle White Collar	5,7	3,5	10,2	1,6	5,5	120
Upper White Collar	4,2	0,9	5,7	0,2	7,1	82
Entrepreneurs	1,6	0,0	0,7	0,2	0,7	14
Total Percent	42,9	12,1	26,3	3,3	15,5	100
Total N	194	55	119	15	70	453

AP 3.14 Acquired Level of Adult Education, 1972-1984 (ADEC84)

OCCWORK	Non Par	Non Cred general	Non Cred career	Cred Par general	Cred Par career	N
Unskilled Worker	12,7	2,8	5,0	0,6	0,2	114
Skilled Worker	7,9	2,6	6,4	0,2	0,0	93
Lower White Collar	5,0	2,4	6,8	0,2	0,7	94
Middle White Collar	2,4	3,0	15,6	0,7	3,9	134
Upper White Collar	1,3	1,3	9,9	0,4	4,4	92
Entrepreneurs	1,3	0,4	1,5	0,2	0,0	18
Total Percent	30,3	11,2	47,2	2,2	9,2	100
Total N	165	61	257	12	50	545

APPENDIX FOUR

AP 4.1 OLS Regression Coefficients for Early Career (Moment 1958)

		PAEDATT	TEACHIQ	ACLEV	OCC58	LOGINC58
X_1	SES38	.330 (8.84)	.027 + (0.78)	.269 (9.74)	.065 (2.09)	.008 + (0.76)
X_2	IQ38	.091 + (1.85)	.595 (18.3)	.287 (8.68)	-.015 + (-.39)	.013 + (0.99)
X_3	PAEDATT		.196 (5.23)	.212 (7.62)	.036 + (1.15)	-.012 + (-1.1)
X_4	TEACHIQ	.289 (6.94)		.197 (5.99)	-.045 + (-1.2)	.004 + (0.34)
X_5	ACLEV				.627 (16.8)	.088 (5.20)
X_6	OCC58					.101 (8.38)
R	SQUARE	.330	.451	.497	.422	.294

*) t values in parentheses. + non-significant coefficient.

AP 4.2 OLS Regression Coefficients for Early Career (Moment 1963)

		PAEDATT	TEACHIQ	ACLEV	ASPED64	ADEC64	OCC63	LOGINC63
X_1	SES38	.330 (8.84)	.027 (0.78)	.269 (9.74)	.035 + (0.91)	.035 + (0.87)	.025 + (0.80)	.055 (4.69)
X_2	IQ38	.091 (1.85)	.595 (18.3)	.287 (8.68)	.051 + (1.16)	.096 (2.00)	.001 + (0.08)	.041 (2.93)
X_3	PAEDATT		.196 (5.23)	.212 (7.62)	.087 (2.38)	.062 + (1.55)	.027 + (0.90)	-.032 (-2.7)
X_4	TEACHIQ	.289 (6.94)		.197 (5.99)	.122 (2.88)	-.046 + (-.99)	-.047 + (-1.3)	-.013 + (-.95)
X_5	ACLEV				.265 (6.03)	.109 (2.24)	.607 (16.3)	.131 (7.89)
X_6	ASPED64					.037 + (0.97)	.078 (2.70)	.001 + (0.13)
X_7	ADEC64						.102 (3.87)	-.038 (-3.7)
X_8	OCC63							.140 (10.4)
R	SQUARE	.330	.451	.499	.199	.052	.456	.479

*) t values in parentheses. + non-significant coefficient (t value ≤ 2).

AP 4.3 OLS Regression Coefficients for Mid Career (Moment 1971)

		PAEDATT	TEACHIQ	ACLEV	ASPED71	ACACUM	OCC71	LOGINC71
X_1	SES1R	.130 (8.84)	.027 + (0.78)	.269 (9.74)	.021 + (0.57)	-.002 + (-.04)	.036 + (1.18)	.034 (2.62)
X_2	IQ1R	.091 + (1.85)	.595 (18.3)	.287 (8.68)	.050 + (1.17)	.035 + (0.75)	.049 + (1.36)	.012 + (0.78)
X_3	PAEDATT		.196 (5.23)	.212 (7.62)	.062 + (1.74)	.097 (2.51)	.027 + (0.91)	-.019 + (-1.5)
X_4	TEACHIQ	.289 (8.96)		.197 (5.97)	.031 + (0.74)	.064 + (1.41)	-.162 (-4.7)	.011 + (0.70)
X_5	ACLEV				.399 (9.32)	.100 (2.05)	.493 (13.1)	.178 (9.97)
X_6	ASPED71					.139 (3.68)	.232 (7.92)	.007 + (0.53)
X_7	ACACUM						.157 (5.87)	-.024 + (-1.9)
X_8	OCC71							.170 (11.2)
R	SQUARE	.330	.451	.499	.260	.102	.470	.522

*) t values in parentheses + non-significant coefficient (t value ≤ 2).

AP 4.4 OLS Regression Coefficients for Late Career (Moment 1980)

		PAEDATT	TEACHIQ	ACLEV	ASPED71	ACLAD	OCCNORX	LOGINC80
X_1	SES1R	.130 (8.84)	.027 + (0.78)	.269 (9.74)	.021 + (0.57)	.031 + (1.33)	.022 + (0.76)	.004 + (0.29)
X_2	IQ1R	.091 + (1.85)	.595 (18.3)	.287 (8.68)	.050 + (1.17)	.033 + (0.85)	.003 + (0.09)	.041 (2.51)
X_3	PAEDATT		.196 (5.23)	.212 (7.62)	.062 + (1.74)	.068 + (1.74)	.011 + (0.38)	-.012 + (-.87)
X_4	TEACHIQ	.289 (8.96)		.197 (5.99)	.031 + (0.74)	.036 + (1.23)	-.022 + (-.85)	.006 + (0.38)
X_5	ACLEV				.399 (9.32)	.743 (21.05)	.602 (20.9)	.125 (8.63)
X_6	ASPED71					.146 (3.93)	.124 (4.36)	.015 + (1.08)
X_7	ACLAD						.383 (14.4)	.004 + (0.27)
X_8	OCCNORX							.103 (6.23)
R	SQUARE	.330	.451	.499	.260	.715	.493	.330

*) t values in parentheses + non-significant coefficient (t value ≤ 2).

APPENDIX FIVE

AP 5.1 Decomposition of structural coefficients for the resource conversion model. Early Career (1958 moment of analysis) Breakdown by total, direct and indirect coefficients.

	Level of Front-end Education (ACLEV)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
School Processes (TEACHIQ)	.258	.197	.061	.323
Home Processes (PAEDATT)	.251	.212	.039	.474
Cognitive Resources (IQ38)	.441	.287	.154	.563
Socioeconomic Resources (SES38)	.352	.269	.083	.496

	Occupational Achievement in 1958 (OCC58)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Acquired Level of Front-end Education	.623	.623	———	.644
School Processes (TEACHIQ)	.172	———	.172	.002
Home Processes (PAEDATT)	.158	———	.158	.041
Cognitive Resources (IQ38)	.281	———	.281	.340
Socioeconomic Resources (SES38)	.291	.065	.226	.375

	Earnings in Early Career 1958 (LOGINC58)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Occupational Achievement in 1958 (OCC58)	.101	.101	———	.497
Acquired Level of Front-end Education	.152	.048	.104	.481
School Processes (TEACHIQ)	-.047	———	-.047	-.041
Home Processes (PAEDATT)	.036	———	.036	.171
Cognitive Resources (IQ38)	-.069	———	-.069	.299
Socioeconomic Resources (SES38)	.061	———	.061	.211

AP 5.2 Decomposition of structural coefficients for the resource conversion model, Early Career (1963 moment of analysis) Breakdown by total, direct and indirect coefficients.

	Motivational Orientation in 1963 (ASPED64)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Acquired level of Front-end Education	.296	.296	----	.415
School Processes (TEACHIQ)	.241	.147	.094	.331
Home Processes (PAEDATT)	.215	.095	.120	.281
Cognitive Resources (IQ38)	.197	----	.197	.317
Socioeconomic Resources (SES38)	.130	----	.130	.249

	Level of Adult Education in 1963 (ADEC64)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Motivational Orientation (ASPED64)	----	----	----	----
Acquired Level of Front-end Education	.156	.156	----	.201
School Processes (TEACHIQ)	.022	----	.022	.114
Home Processes (PAEDATT)	.023	----	.023	.153
Cognitive Resources (IQ38)	.126	.081	.045	.168
Socioeconomic Resources (SES38)	.039	----	.039	.141

	Occupational Achievement in 1963 (OCC63)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Level of Adult Education in 1963 (ADEC63)	.104	.104	----	.236
Motivational Orientation in 1963 (ASPED64)	.075	.075	----	.341
Acquired level of Front-end Education	.641	.609	.032	.661
School Processes (TEACHIQ)	.177	----	.177	.325
Home Processes (PAEDATT)	.168	----	.168	.348
Cognitive Resources (IQ38)	.303	----	.303	.371
Socioeconomic Resources (SES38)	.241	----	.241	.359

	Earnings in Early Career 1963 (LOGINC63)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Occupational Achievement in 1963 (OCC63)	.141	.141	----	.602
Level of Adult Education (ADEC64)	-.024	-.258	.074	----
Motivational Orientation (ASPED64)	.011	----	.011	.285
Acquired level of Front-end Education	.218	.128	.090	.620
School Processes (TEACHIQ)	.058	----	.058	.325
Home Processes (PAEDATT)	.050	-.032	.050	.266
Cognitive Resources (IQ38)	.133	.036	.097	.404
Socioeconomic Resources (SES38)	.138	.056	.082	.409

AP 5.3 Decomposition of structural coefficients for the resource conversion model, Mid Career (1971 moment of analysis) Breakdown by total, direct and indirect effect parameter estimates.

	Level of Adult Education in 1971 (ACACUM71)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Motivational Orientation (ASPED71)	.149	.149	-----	.193
Acquired level of Front-end Education	.221	.149	.072	.266
School Processes (TEACHIQ)	.088	-----	.088	.211
Home Processes (PAEDATT)	.153	.097	.056	.215
Cognitive Resources (IQ38)	.112	-----	.112	.207
Socioeconomic Resources (SES38)	.111	-----	.111	.193

† overidentified	Occupational Achievement in 1971 (OCC71)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Level of Adult Education in 1971 (ACACUM)	.161	.161	-----	.132
Motivational Orientation (ASPED71)	.260	.236	.024	.143
Acquired level of Front-end Education	.685 †	.534	.151	.620
School Processes (TEACHIQ)	.182	-.136	.182	.248
Home Processes (PAEDATT)	.183	-----	.183	.139
Cognitive Resources (IQ38)	.301	-----	.301	.346
Socioeconomic Resources (SES38)	.237	-----	.237	.190

	Earnings in Mid Career 1971 (LOGINC71)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Occupational Achievement in 1971 (OCC71)	.184	.184	-----	.611
Level of Adult Education in 1971 (ACACUM)	.026	-----	.026	.192
Motivational Orientation in 1971 (ASPED71)	.042	-----	.042	.130
Acquired level of Front-end Education	.276	.185	.091	.458
School Processes (TEACHIQ)	.079	-----	.079	.242
Home Processes (PAEDATT)	.077	-----	.077	.220
Cognitive Resources (IQ38)	.133	-----	.133	.334
Socioeconomic Resources (SES38)	.034	.030	.004	.181

AP 5.4 Decomposition of structural coefficients for the resource conversion model, Late Career (1980 moment of analysis) Breakdown by total, indirect and direct effects parameter estimates and raw correlation coefficients.

	Level of Adult Education in 1980 (ACLAD)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Motivational Orientation in 1971 (ASPED71)	.158	.158	----	.277
Acquired level of Front-end Education	.323	.246	.077	.323
School Processes (TEACHIQ)	.085	----	.085	.232
Home Processes (PAEDATT)	.082	----	.082	.227
Cognitive Resources (IQ)38)	.146	----	.146	.238
Socioeconomic Resources (SES38)	.115	----	.115	.215

	Occupational Achievement in 1980 (OCC80RX)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Level of Adult Education in 1980 (ACLAD)	.382	.382	----	.440
Motivational Orientation in 1971 (ASPED71)	.185	.124	.061	.422
Acquired level of Front-end Education	.581	.399	.182	.582
School Processes (TEACHIQ)	.152	----	.152	.319
Home Processes (PAEDATT)	.145	----	.145	.305
Cognitive Resources (IQ38)	.263	----	.263	.349
Socioeconomic Resources (SES38)	.209	----	.209	.328

	Earnings in Late Career 1980 (LOGINC80)			
Independent Variables	Total effect	Direct effect	Indirect effect	Raw r
Occupational Achievement in 1980 (OCC80RX)	.108	.108	----	.479
Level of Adult Education in 1980 (ACLAD)	.042	----	.042	.275
Motivational Orientation in 1971 (ASPED71)	.020	----	.020	.320
Acquired level of Front-end Education	.191	.127	.064	.523
School Processes (TEACHIQ)	.052	----	.052	.324
Home Processes (PAEDATT)	.048	----	.048	.243
Cognitive Resources (IQ38)	.132	.045	.087	.375
Socioeconomic Resources (SES38)	.068	----	.068	.276

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